United States Department of the Interior
Fish and Wildlife Service
Ecological Services
Carlsbad Fish and Wildlife Office
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Carlsbad, CA 92008

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Memorandum

To: Field Supervisor
Carlsbad Field Office

From: Assistant Field Supervisor
Carlsbad Field Office

Subject: Biological and Conference Opinions on Issuance of an Incidental Take Permit to the County of San Diego under the Multiple Species Conservation Program for their Subarea Plan (1-6-98-FW-03).

This document constitutes the Biological and Conference Opinion prepared pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act), on the effects of issuing an incidental take permit to the County of San Diego (County) for up to 85 species pursuant to Section 10(a)(1)(B) of the Act, and signing an agreement with the County to implement their subarea plan. The proposed incidental take of up to 85 species would occur as a result of habitat loss and disturbance associated with residential and limited municipal development consistent with the Multiple Species Conservation Program (MSCP) Plan (dated August 1996 and revised December 1996; hereby incorporated by reference), as described in the County of San Diego Subarea Plan (August 1996).

MSCP is a comprehensive habitat conservation planning program which provides for regional process to authorize incidental take for urban development and for the conservation of multiple species and their habitats within a 582,243-acre planning area in southwestern San Diego County. The MSCP planning area includes 12 local jurisdictions and special districts in southern coastal San Diego County, each of which is expected to apply for incidental take permits in conjunction with finalization of a subarea plan that is consistent with the regional MSCP Plan. The environmental impacts expected to result from these plans were analyzed in the Recirculated Draft and Final Joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for Issuance of Take Authorizations for Threatened and Endangered Species Due to Urban Growth Within the MSCP Planning Area (Dudek 1996). The effects of implementing the MSCP Plan were analyzed in a Biological Opinion (MSCP BO) dated June 6, 1997 (1-6-97-FW-47), which is hereby incorporated by reference and provided as Attachment 1.

The County of San Diego Subarea Plan (County Subarea Plan) is a component of the MSCP Plan that was analyzed at a regional level in the MSCP BO. This Biological Opinion specifically addresses the effects of issuing a take permit to the County for projects consistent

with the MSCP Plan and County Subarea Plan. Terms used in this document are consistent with those defined in section 2.0 of the Implementing Agreement (IA) by, and between, U.S. Fish and Wildlife Service (Service), California Department of Fish and Game (CDFG), and County of San Diego (County).

Covered Species

The proposed permit action may directly and/or indirectly affect the following listed and proposed species:

Threatened Animals

western snowy plover	*Charadrius alexandrinus nivosus*
coastal California gnatcatcher	*Polioptila californica californica*
bald eagle	*Haliaeetus leucocephalus*
red-legged frog	*Rana aurora draytoni*

Endangered Animals

Riverside fairy shrimp	*Streptocephalus woottoni*
San Diego fairy shrimp	*Branchinecta sandiegonensis*
California brown pelican	*Pelecanus occidentalis californicus*
American peregrine falco	*Falco peregrinus anatum*
light-footed clapper rail	*Rallus longirostris levipes*
California least tern	*Sterna antillarum browni*
southwestern willow flycatcher	*Empidonax traillii extimus*
least Bell's vireo	*Vireo bellii pusillus*
arroyo toad	*Bufo microscaphus californicus*

Endangered Plants

Del Mar manzanita	*Arctostaphylos glandulosa* ssp. *crassifolia*
salt marsh bird's beak	*Cordylanthus maritimus* ssp. *maritimus*
San Diego button-celery	*Eryngium aristulatum* var. *parishii*
California Orcutt grass	*Orcuttia californica*
San Diego mesa mint	*Pogogyne abramsii*
Otay Mesa mint	*Pogogyne nudiuscula*

Threatened Plant

Encinitas baccharis	*Baccharis vanessae*

Proposed Plants

San Diego thornmint	*Acanthomintha ilicifolia*
coastal dunes milk vetch	*Astragalus tener* var. *titi*
Nevin's barberry	*Berberis nevinii*
thread-leaved brodiaea	*Brodiaea filifolia*
Otay tarplant	*Hemizonia conjugens*
willowy monardella	*Monardella linoides* ssp. *viminea*
spreading navarretia	*Navarretia fossalis*
Dehesa bear-grass	*Nolina interata*

In addition to the above identified species, the County is seeking assurances of future permitted take for 57 sensitive animal and plant species that are currently neither listed nor proposed for listing. While take of listed plants is not prohibited under the ESA, the above listed plants have been included on the list of species covered by the permit in recognition of the conservation measures provided for those species under the MSCP and approved subarea plans and the Service's determination that activities conducted in compliance with the MSCP, approved subarea plans, and the incidental take permit are not likely to jeopardize those species. Each of the wildlife and plant species identified above will be included in the section 10(a)(1)(B) permit. The permit will become effective as to a particular sensitive species concurrently with its listing as threatened or endangered, provided the species is also included as a "Covered Species Subject to Incidental Take for the County", as defined below. In the MSCP Plan, these sensitive species are treated as if they were listed, and are treated likewise by the Service for the purpose of this Biological and Conference Opinion.

The 57 sensitive species covered by the plan that are not federally listed include one animal that is currently a candidate for listing, the mountain plover (*Charadrius montanus*), and 31 plants, 17 birds, three reptiles, three mammals, and two invertebrates. These species are provided in Table 1 of the attached MSCP Biological Opinion.

The IA distinguishes between "Covered Species", which includes all 85 species described above, and "Covered Species Subject to Incidental Take", defined as species which are adequately conserved by a particular subarea plan and are therefore subject to incidental take under the take authorizations issued in conjunction with execution of a legal agreement to implement that particular subarea plan. The take authorization issued by the Service when a subarea plan is approved will only cover those species determined by the Service to be adequately conserved by the subarea plan and any other approved subarea plan. A species on the "Covered Species" list may be added to a jurisdiction's list of "Covered Species Subject to Incidental Take" when: 1) the Service approves other subarea plan(s) that adequately conserve such species; 2) such species become listed as federally threatened or endangered; and 3) the Service notifies the participating entity in writing that the Section 10(a) Permit is effective with respect to such species.

The"Covered Species Subject to Incidental Take" under the County Subarea Plan includes 82 species. The take authorization and assurances provided by the Service to the County upon the effective date of the IA would cover these 82 species. The County's take authorization for the remaining three "Covered Species" (California least tern and, if they become listed, Orcutt's bird's beak and Del Mar sand aster) are dependent upon the City of San Diego Subarea Plan, which is currently in effect. The County will receive incidental take authorization for these three species as long as the City of San Diego Subarea Plan is in effect. If, during the term of the County Subarea Plan, the City of San Diego Subarea Plan is terminated, the County may no longer receive coverage for these three species.

The proposed action may also affect designated critical habitat for the least Bell's vireo and the southwestern willow flycatcher and proposed critical habitat for the snowy plover. Critical habitat has been designated for the Peregrine falcon but none occurs within the County Subarea or the MSCP Planning Area. No designated or proposed critical habitat for any of the other covered species occurs within the action area.

Species Not Covered

This document also addresses potential indirect effects which may result from the adoption of the County Subarea Plan on three species listed as endangered [Orcutt's spineflower (*Chorizanthe orcuttiana*), Quino checkerspot butterfly (*Euphydryus editha quino*), and Pacific pocket mouse (*Perognathus longimembris pacificus*)] and one species proposed for listing [Mexican flannelbush (*Fremontodendron mexicanum*)] that are not covered under the MSCP Plan but have the potential to occur within, or are known from, the County's MSCP planning area. Incidental take of these species will not be authorized under this section 10(a)(1)(B) permit. Impacts to these species, and other non-covered sensitive species, will continue to be considered in accordance with existing laws and regulations.

Administrative Record

This Biological and Conference Opinion was prepared using the following information: (1) MSCP Plan, Volumes I and II with revisions (Ogden 1996); (2) Recirculated Draft Joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for Issuance of Take Authorizations for Threatened and Endangered Species Due to Urban Growth Within the MSCP Planning Area (Dudek 1996); (3) Final EIR/EIS, Issuance of Take Authorizations for Threatened and Endangered Species due to Urban Growth within the Multiple Species Conservation Program Planning Area (Dudek 1997a); (4) Draft Implementing Agreement by and between U.S. Fish and Wildlife Service, California Department of Fish and Game, and County of San Diego; (5) MSCP 1995 and 1996 Species Evaluations, U.S. Fish and Wildlife Service and California Department of Fish and Game (Service 1996b); (6) Endangered and Threatened Wildlife and Plants; Special Rule Concerning Take of the Threatened Coastal California Gnatcatcher (50 CFR part 17: 65088, Vol. 58, No. 236); (7) Southern California Coastal Sage Scrub Natural Community Conservation Planning (NCCP) Process and

Conservation Guidelines (November 1993); (8) Biological and Conference Opinion on Issuance of an Incidental Take Permit to the City of San Diego pursuant to the Multiple Species Conservation Program (MSCP BO: 1-6-97-FW-47); and (9) other information in the Service's files. The complete administrative record for this consultation is on file at the Service's Carlsbad Field Office.

I. BACKGROUND

A detailed background of the MSCP Program is provided in the background section of the attached MSCP Biological Opinion. Each of the 12 jurisdictions or special districts within the MSCP planning area is expected to apply for incidental take permits in conjunction with finalization of a subarea plan that is consistent with the regional MSCP Plan. Local jurisdictions and special districts will implement their respective portions of the MSCP Plan through subarea plans which describe specific implementing mechanisms for the MSCP Plan. The Cities of San Diego and Poway have finalized their subarea plans and received take authorizations under MSCP. The City of La Mesa has submitted an application and prepared a plan that has gone out for public review, and the plan is expected to be finalized in the near future. The County of San Diego submitted its application with the County Subarea Plan and Implementing Agreement (IA) on December 5, 1997.

Combined, the Cities of San Diego and Poway and the County of San Diego's Subarea Plans make up approximately 83 percent of the MSCP Planning Area and 88 percent of the remaining habitat within the MSCP Planning Area. These three jurisdictions will conserve 163,094 acres accounting for 95 percent of the entire MSCP preserve system and conserve overall, 59 percent of the natural habitats within their boundaries in the MSCP Planning Area. Each subarea plan prepared pursuant to the MSCP Plan is intended to serve as a multiple species habitat conservation plan (HCP) pursuant to section 10(a)(2)(A) of the Act. An HCP is required for issuance of a permit for incidental take of listed wildlife species pursuant to section 10(a)(1)(B) of the Act. An HCP may also serve as a Natural Community Conservation Plan (NCCP) pursuant to the State of California's NCCP Act of 1991, provided findings are made that the plan is consistent with this Act.

This Biological Opinion analyzes the effects of issuing a take permit to the County of San Diego for urban development and related activities carried out consistent with the MSCP Plan and the County's Subarea Plan and IA.

Action Area

For purposes of consultation under section 7 of the Act, the action area for the County is defined as all land within the County of San Diego MSCP Subarea Plan delineated on Figure 1.1 of the County Subarea Plan, excluding the MSCP "Cornerstone Lands" owned by the City of San Diego (see MSCP Plan, MSCP BO for description of the Cornerstone Lands).

II. DESCRIPTION OF THE PROPOSED ACTION

The County of San Diego has applied to the Service for a section 10(a)(1)(B) permit to authorize incidental take of 85 species, including 20 federally listed species, eight species proposed for federal listing, and 57 other sensitive species ("Covered Species"). The permit application was accompanied by a revised County Subarea Plan and a draft IA. The County Subarea Plan is consistent with the MSCP Plan, which provides guidelines for achieving the biological goal of establishing and managing a preserve system consisting of core biological resource areas and linkages that conserve viable populations of multiple sensitive species and their habitats. The MSCP Plan is herein incorporated by reference.

In accordance with the Special Rule Concerning Take of the Threatened Coastal California Gnatcatcher (58 FR 65088), the Service concurred on July 15, 1997 that the MSCP Plan meets the incidental take permit issuance criteria described in section 10(a)(2)(B) of the Act and in 50 CFR 17.32(b)(2), and that the MSCP plan is consistent with the State of California's NCCP Act.

The Service currently proposes to issue a permit to the County for 85 Covered Species and to sign an IA that commits the Service, CDFG, and the County to fund and implement provisions of the MSCP Plan and the County Subarea Plan. To carry out the MSCP Plan and the County Subarea Plan, the County has committed to preserve in perpetuity approximately 101,268 acres of lands in a configuration which will meet the goals of the MSCP Plan and the County Subarea Plan using the methods set forth in Section 10.5 of the IA. Of the total lands to be preserved in the County Subarea, approximately 59,969 acres are already preserved or planned for dedication by public and private entities (30,240 State/Federal; 5,461 County; and 24,268 private). To complete the preserve, approximately 18,850 acres are expected to be acquired with federal, state, and local public funds. In addition, application of the County's Biological Mitigation Ordinance (BMO) and the criteria in the County Subarea Plan are expected to result in the preservation of approximately 22,450 acres of habitat.

Section 2.2.6.1 of the MSCP EIR/EIS describes three land categories for the County Subarea, as shown on the Subarea Plan maps at Figures 2-11 through 2-14 of the MSCP EIR/EIS. These terms will be used throughout this BO to describe the County Subarea Plan and its effects on covered species. Category 1 and 2 lands are "hard lined" into the plan (ie. delineated on the maps as either 100 percent preserved or 100 percent developed) while Category 3 lands are not required to conform to any delineated preserve design boundaries, but rather must adhere to County Subarea Plan preserve design requirements.

Category 1: Land which by existing agreement will be conserved, within boundaries delineated on the County Subarea Plan maps;

Category 2: Land which by existing agreement will be developed, within boundaries delineated on the County Subarea Plan maps (Figures 1.1 through 1.3 of

the County Subarea Plan), and for which no additional biological mitigation is necessary; and

Category 3: Land for which preserve and development boundaries have not been delineated, but which will be subject to the terms of the County's BMO in order to receive take authorizations (MSCP EIR/EIS Figure 2-14).

a) Major amendment areas: These are areas which are not currently covered under the County Subarea Plan but which may be amended to the Plan. Major amendments must be processed by the Service and CDFG to conform with all applicable laws and regulations, including the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and the Endangered Species Act.

b) Minor amendment areas: These include land with habitat that could be partially or completely eliminated (with appropriate mitigation) without significantly affecting the overall goals of the County Subarea Plan. Projects in minor amendment areas are covered under the Plan provided they are consistent with the County Subarea Plan and BMO and have been approved by the Service's Field Office Supervisor and CDFG's NCCP Program Manager.

c) Metro-Lakeside-Jamul segment: These areas are required to conform with the goals and criteria specified in the "Metro-Lakeside-Jamul" segment of the Subarea Plan (described below).

d) "D" designator areas: These include lands within the Santa Fe Valley Specific Plan Area (SPA) with a special designator designed to address the protection of sensitive coastal sage scrub and vernal pool plant communities, and linkages between core habitat areas. Projects within these areas are not allowed to impact more than 0.25 acre per parcel and development must be configured in a manner that minimizes impacts to sensitive biological resources.

The County Subarea is divided into three segments: Lake Hodges, South County, and Metro-Lakeside-Jamul. The Lake Hodges and South County segments consist primarily of Category 1 and 2 lands with minor components of Category 3a, 3b, and 3d, while the Metro-Lakeside-Jamul segment consists primarily of Category 3c land.

The BMO does not apply to Category 1 and 2 lands within the Lake Hodges and South County segments. Habitat and species within these categories have been surveyed and the specific location of conservation areas and necessary mitigation have been determined. The BMO applies within the Metro-Lakeside-Jamul segment (Category 3c), and any major or minor amendment areas (Category 3a, and 3b respectively) within the entire County Subarea Plan.

The Lake Hodges segment is located in west-central San Diego County and includes lands surrounding Lake Hodges. Four major projects are found in this segment: Rancho Cielo, 4S Ranch, Santa Fe Valley, and the Madura subdivision. The landowners for these four projects have agreed to the proposed preserve design for Category 1 and Category 2 lands as depicted on Figure 1.2 of the County Subarea Plan. Category 3 lands in the Lake Hodges segment include a major amendment area comprised of three parcels north of San Dieguito River, a minor amendment area north of Lusardi Creek, and two "D" designator areas with numerous small parcels within the Santa Fe Valley SPA (County Subarea Plan Figure 1-2). The Lake Hodges segment encompasses 9,029 acres, of which 4,743 acres (53 percent) would be preserved. No land acquisition is necessary within this segment to achieve the proposed level of conservation.

The South County segment consists of approximately 82,767 acres in the southwest section of the County (Figure 1.2 of the County Subarea Plan). Section 2.2.6 of the MSCP EIR/EIS indicates that most of this segment consists of Category 1 and 2 lands. All of the Category 1 lands identified in the EIR/EIS were analyzed as preserved under the proposed project alternative. Page 1-3 and Figure 1-3 of the County Subarea Plan indicate that certain properties are conserved subject to agreements between the land owners and the Service and CDFG. In the event that these agreements fail these lands are Category 3a (major amendment areas), and therefore it is assumed that these lands will be preserved in a manner consistent with the description in the MSCP EIR/EIS and as committed to in the County Subarea Plan and Implementation Agreement. These areas are addressed in the South County Segment (Figure 1-2) as Major Amendment Areas (Category 3a) and will not receive any take authorization under the County's permit unless it is amended in the future.

The proposed preserve system in the South County segment will include approximately 48,240 acres (58 percent of the entire segment). The segment includes private development plans (Otay Ranch, Hidden Valley Estates, Pointe San Diego, Las Montanas), non-government owned preserves and mitigation banks (The Nature Conservancy land on McGinty Mountain and mitigation banks managed by The Environmental Trust on McGinty Mountain, O'Neal Canyon and Marron Valley), and public lands (Bureau of Land Management, City of San Diego, County of San Diego, and National Wildlife Refuge). An additional proposed private development plan, San Miguel Partners, is in the planning stages under the jurisdiction of the City of Chula Vista. Although this project is currently within the County jurisdiction, it is being planned by the City of Chula Vista and will likely be annexed to the City. Recently, 1,686 acres of the northern parcel of San Miguel Ranch property was added to the National Wildlife Refuge system.

The Metro-Lakeside-Jamul segment consists of lands that are within the County's MSCP planning area but outside the Lake Hodges and South County segments (Figures 1.1 through 1.3 of the County Subarea Plan). No preserve design boundaries have been designated within this segment except for the Helix Company properties, where boundaries will be further

modified as necessary to avoid impacts to narrow endemic species consistent with the BMO. Preserve design within the Metro-Lakeside-Jamul segment will be consistent with the County's Biological Mitigation Ordinance (BMO) and criteria specified in the County Subarea Plan. The Service and CDFG will comment on the consistency of individual projects through the CEQA process and annually review the cumulative conservation and habitat loss approved by the County pursuant to the County Subarea Plan (County Subarea Plan section 4.3.1).

Article 10.5.A.2 of the IA commits the County to implement conservation efforts that achieve the following goals and meet the following criteria as stated in the BMO and in the County Subarea Plan. These criteria apply only to the Metro-Lakeside-Jamul segment (Category 3c) and to major and minor amendment areas (Category 3a and 3b).

1. Preserve design criteria: Section 4.2.1 of the County Subarea Plan and attachment G of the BMO identify and describe seven preserve design criteria; Article V.A(5) of the BMO requires that projects be consistent with these criteria, which include: a) acknowledgment of the Federal no-net-loss of wetlands standard for individual projects; b) inclusion of measures to maximize the habitat structural diversity of conserved habitat areas; c) provision for the conservation of spatially-representative examples of extensive patches of coastal sage scrub and other habitat types with high biological value; d) preservation of large blocks of habitat to reduce edge and fragmentation effects; e) provision of incentives for development in the least sensitive habitat areas; f) minimization of impacts to narrow endemic species and avoidance of impacts to core populations of narrow endemic species; g) achievement of the conservation goals for covered species and habitats provided in the County Subarea Plan; and h) preservation of the biological integrity of linkages between "Biological Resource Core Areas" (BRCA).

BRCAs are described in section 4.2.2 of the County Subarea Plan and defined in Article VI.A.1 of the BMO. The wildlife agencies have developed a Preapproved Mitigation Area Map (Attachment 1, page 3 of the County Subarea Plan) which incorporates the most critical resource areas identified during the MSCP Planning process. All lands depicted in the Preapproved Mitigation Area qualify as BRCAs. The County BMO lists five additional criteria that qualify an area as a BRCA. As stated in the BMO, land needs to meet one of the following six criteria to qualify as a BRCA: a) lands are shown on the Preapproved Mitigation Area map; b) lands support or contribute to the long-term survival of sensitive species and are adjacent to lands on the Preapproved Mitigation Area map; c) lands that are part of a regional linkage/corridor; d) lands that are ranked on the MSCP Habitat Evaluation Map as High or Very High quality and are likely to have long-term viability; e) lands within a block of habitat greater than 500 acres which contain diverse and undisturbed habitat which will contribute to the long-term survival of sensitive species; or f) land that contain a high number of sensitive species, or specified soils likely to support sensitive plants, and which is adjacent to or contiguous with undisturbed habitat.

The BMO requires projects to locate development in areas which minimize impacts to habitat, using clustering where possible to achieve this goal. Projects will be allowed to encroach into steep slopes to avoid impacts to habitat. The BMO does not require all mitigation to occur within the Preapproved Mitigation Area or other BRCA land. To provide an incentive for preserving land in the BRCAs and concentrating development outside these areas, the County BMO requires that impacts to habitat within a BRCA be mitigated at a higher ratio than impacts outside the BRCA. Also, the BMO provides greater mitigation credit for mitigation within a BRCA than outside a BRCA. Attachment M of the BMO provides the mitigation ratios required for impacted lands and mitigation lands both inside and outside of a BRCA.

2. Habitat protection goals: Table 4-2 of the County Subarea Plan provides habitat protection goals in terms of numbers of acres to be preserved for each vegetation community type within the planning segment. Section 10.5.A.2 of the IA commits the County to achieving these goals. The areas targeted for conservation within the Metro-Lakeside-Jamul segment are depicted on the Preapproved Mitigation Area map (Attachment 1, page 3 of the County Subarea Plan), and only lands identified on this map or those mutually agreed to by the County, the Service and CDFG will be credited toward meeting the conservation goals specified in the County Subarea Plan. The achievement of the habitat protection goals within the Preapproved Mitigation Area is expected to result in a preserve system consistent with the MHPA preserve design alternative identified in the MSCP EIR/EIS and provide for the long term conservation of habitats and covered species.

As a means to achieve the habitat protection goals for each vegetation type, the BMO requires mitigation ratios that are commensurate with the rarity of the resource. Attachment K of the BMO categorizes vegetation types in four tiers according to habitat rarity, with Tier I consisting of the rarest habitat types and Tier IV consisting of lands which do not support natural vegetation and are not controlled by the ordinance. Impacts to the rarest vegetation types require the greatest mitigation ratios, as specified in Attachment M of the BMO. Three of the rarest types in Tier I (southern maritime chaparral, wetlands, and maritime succulent scrub) require in-kind mitigation. All other mitigation may be out-of-kind but must be in-tier unless credits are acquired within a mitigation bank located in the County Subarea. All impacts within the County Subarea must be mitigated within the MSCP Planning Area. Wetland impacts throughout the County Subarea will continue to be subject to section 404 of the Clean Water Act and Fish and Game Code Section 1600 processes, as appropriate.

3. Goals and criteria for linkages and corridors: Section 4.2.3 of the County Subarea Plan and attachment H to the BMO list five important habitat linkages within the Metro-Lakeside-Jamul segment, and describe goals and criteria to be met for linkages and corridors. Article V.A.(5) of the BMO requires that projects comply with these criteria.

Linkages are differentiated from corridors in the County Subarea Plan in that a linkage is defined as an area of habitat that not only provides connectivity between core areas but also provides breeding and foraging habitat for resident species, while corridors are defined as connections that allow for movement and dispersal only, and are generally narrower in width.

The Plan includes 11 design criteria for linkages and corridors. These include: 1) maintenance of live-in habitat linkages for wildlife; 2) identification and maintenance of existing movement corridors within linkages; 3) protection of corridors with good vegetative and/or topographic cover; 4) selection of regional linkages that accommodate travel for a wide range of wildlife species; 5) basing linkage width on biological information for target species, the quality of the habitat within and adjacent to the corridor, topography, and adjacent land use; 6) maximizing width and minimizing length of corridors in accordance with specific guidelines provided in the plan; 7) maximizing visual continuity for wildlife within a corridor; 8) selecting corridors with low levels of human disturbance; 9) minimizing of barriers, such as roads, with a length-to-width ratio for wildlife underpasses to be less than two if the height is 30 feet or less; 10) maximizing use of road bridges rather than wildlife tunnels at wildlife crossings (specific design criteria for crossings are provided in the County Subarea Plan); and 11) maximizing use of habitat archipelagos where continuous corridors do not currently exist.

4. Species protection goals: Table 4-3 of the County Subarea Plan provides the anticipated species conservation levels for the Metro-Lakeside-Jamul segment. These conservation levels are expressed in terms of the number of occurrences that would be preserved under the plan based upon species occurrences in the 1994 MSCP database. Section 10.5.A.2 of the IA requires avoidance of impacts consistent with Table 4-3 of the County Subarea Plan.

5. Critical populations: Article VII(A)4 of the BMO requires that impact avoidance be the first priority given to the critical populations of sensitive and covered species within the Metro-Lakeside-Jamul segment. These species are listed in Table 4-4 of the County Subarea Plan and Attachment C of the BMO. Where complete avoidance is infeasible, the BMO requires County staff to work with the project applicant to minimize impacts to these populations to the maximum extent practicable.

6. Sensitive plants: Table 4-5 of the County Subarea Plan and Attachment E of the BMO list the narrow endemic plants within the Metro-Lakeside-Jamul segment which require focused evaluation during project review. The BMO incorporates special avoidance and mitigation measures for these species and others that meet the criteria for Group A or B sensitive plants. Group A is defined as "plants that are rare, threatened or endangered in California and elsewhere", while Group B is defined as "plants that are rare, threatened or endangered in California but more common

elsewhere." All the narrow endemic species listed on Table 4-5 of the County Subarea Plan and Attachment E of the BMO also qualify as either Group A or Group B species.

The BMO requires impacts to designated narrow endemic plants and any other sensitive plant species which meet the criteria for Group A or B species to be avoided to the maximum extent practicable. A maximum impact of 20 percent of the population, depending upon the species' sensitivity, is allowed under the BMO. Where impacts to any of these species are allowed, the BMO requires in-kind mitigation at a 1:1 to 3:1 ratio depending upon the sensitivity of the species and population size.

The BMO also defines Group C as "plants which may be quite rare, but need more information to determine their true rarity status" and Group D species as "plants of limited distribution that are uncommon, but not presently rare or endangered". Species meeting these criteria are to be protected using general preserve design requirements and habitat-based mitigation requirements specified in the BMO. The BMO specifies that mitigation must be in-kind if the impacts would substantially reduce the viability of the affected population or species.

7. Rare narrow endemic animals: Table 4-6 of the County Subarea Plan and Attachment D of the BMO identifies those animal species for which impacts are to be avoided to the maximum extent practicable. The BMO specifies that where complete avoidance is infeasible, the project will be required to avoid significant reduction in species viability.

Avoidance requirements must also meet all species-specific requirements set forth in Table 3-5 of the MSCP Plan (Attachment 2 to this BO), including any applicable limitations on clearing of occupied habitat. The BMO also includes specific measures for the burrowing owl, arroyo toad, least Bell's vireo, coastal cactus wren, and southwestern willow flycatcher that are consistent with requirements specified in the MSCP Plan's Table 3-5.

Exemptions: Projects that are exempt from the BMO include: a) any project which is on an existing legal lot and requires only a ministerial permit and is exempt from compliance with the CEQA (IA, Section 17.1.A(2)); b) the adoption or amendment of the General Plan or any ordinance; c) projects within Take Authorization areas in the Lake Hodges and Southern segments and projects that have received an approved Habitat Loss Permit pursuant to the 4(d) special rule; d) any project for which a Vesting Tentative map or Public Benefit Agreement was approved prior to the enactment of the ordinance; e) any project for which application of the BMO would result in no reasonable economic use of the property; f) any project within the Redevelopment Plan for the Upper San Diego River Improvement Project; g) brushing and clearing on existing parcels 10 acres or under in size containing a dwelling unit as of the date

of adoption of the BMO; h) a public facility or public project, provided it is consistent with the MSCP Plan and the County Subarea Plan; I) any sand, gravel or mineral extraction, provided it is consistent with the MSCP Plan and the County Subarea Plan; j) agriculturally-related clearing, provided the land is not within a Preapproved Mitigation Area or floodplain and meets specified requirements regarding duration of active agricultural use (Section 4.3.4. of the County Subarea Plan states that the total number of acres for exemptions granted for agricultural clearing within the Metro-Lakeside-Jamul segment but outside the Preapproved Mitigation Area shall not exceed 3,000 acres, and any such clearing which exceeds 3,000 acres would be subject to the BMO); k) parcels of ten acres or less in size, zoned for single family residential uses, provided no more than two acres are cleared if within the Preapproved Mitigation Area and no more than five acres are cleared if outside the Preapproved Mitigation Area.

Section 9.16 of the IA and Section 4.3.3. of the County Subarea Plan describe a process for projects that have already gone through discretionary approval (exemption d) and/or received a Habitat Loss Permit (exemption c) to receive a Certificate of Participation, which would give the project applicant third party beneficiary status and authorization to take all "Covered Species Subject to Incidental Take" under the County Subarea Plan. It is the option of the project proponent to apply for a Certificate of Participation. Before the Certificate of Participation is issued, the County must make a determination that the project conforms to the standards of the County Subarea Plan and BMO, and the wildlife agencies must concur with this determination. Section 9.21 of the IA states that existing mining operations may also apply for a certificate of participation if take authorizations are needed.

Section 9.20 of the IA states that the take authorizations will apply to those lands within the County Subarea Plan actively being used for agricultural purposes, including crop production, animal production, forage production, and grazing. Only those lands depicted as agricultural lands on the vegetation database depicted on Figure 2-1 of the MSCP are considered "actively being used" as defined in the IA. For lands that meet this criterion, a landowner may receive a Certificate of Inclusion from the County, at which time the take authorization provided through MSCP will be effective for the landowner.

Section 1.9.3. of the County Subarea plan states that current maintenance and operation activities for public infrastructure, including access road maintenance, clearing/desilting of flood/drainage control facilities and those which require the ongoing maintenance of cleared areas, will be allowed if conducted in a manner consistent with all existing Federal and State laws and regulations. Any take associated with infrastructure projects within the preserve planning area will only be authorized though the major amendment process, and will require separate CEQA and NEPA review as well as Service approval.

Monitoring and Adaptive Management. The MSCP monitoring and management requirements are described on pages 11 and 12 of the MSCP Biological Opinion. The County will submit a framework management plan to the wildlife agencies within six months of the issuance of their

Take Authorization. The framework management plan will serve as a working document to provide appropriate measures to manage biological resources to optimize their long-term viability, with biological resource monitoring to provide information that can be used to adapt management measures to changing needs. Area specific management directives must also be prepared and implemented as logical and discrete areas of land are committed for permanent preservation by the County (IA, Section 10.10). Preserve management guidelines are provided in section 6.0 of the MSCP Plan, and specific conditions for management of covered species are provided in Table 3-5 of the MSCP Plan. The adaptive management process will provide for the incorporation of new information, as determined through research, monitoring, and ongoing management, into preserve and species management actions.

III. SPECIES ACCOUNTS AND ENVIRONMENTAL BASELINE

The environmental baseline and species accounts for the entire MSCP Plan are provided in the MSCP Biological Opinion, incorporated herein by reference. The following text focuses on the County's Subarea, with a discussion of each major habitat type which occurs within the County Subarea. The federally listed, proposed and candidate species dependent upon each habitat type are also discussed. Covered species which are not currently listed, proposed, or candidates for listing are addressed in Table 1 of the MSCP BO, which includes brief accounts of the status, distribution, and habitat affiliations of each of these additional covered species.

For analysis purposes, point occurrences of species were used. See the MSCP Biological Opinion for limitations regarding information based on MSCP database occurrences. "Occurrence"is a documented map point locality on the GIS database for a given covered species within the MSCP Planning Area. An occurrence may represent an individual, a group of individuals, or a population. If the information was available, the GIS database noted the approximate number of individuals or size of the population. Major populations were determined in the MSCP Resource Documents based on the number of individuals documented and the proximity of individuals to each other. For example, several point localities for the Otay Mesa mint within a given vernal pool complex would be considered to be one population.

A. Covered Species which are Federally Listed, Proposed, or Candidates for Listing

1. Coastal Sage Scrub/Maritime Succulent Scrub/Southern Coastal Bluff Scrub

The total amount of upland scrub habitats in the County Subarea is approximately 74,730 acres. The County Subarea currently contains approximately 71,326 acres of coastal sage scrub; 3,455 acres in the Lake Hodges segment, 40,070 acres in the Metro-Lakeside-Jamul segment, and 27,801 acres in the South County segment. Coastal sage scrub/chaparral is present on approximately 41 acres in the Lake Hodges segment, 2,926 acres in the Metro-Lakeside-Jamul segment, and 153 acres in the South County segment, for a total of 3,119 acres. The County Subarea contains approximately 285 acres of maritime succulent scrub, all of which occurs in the South County segment.

Coastal California Gnatcatcher (*Polioptila californica californica)* [Threatened]

The current estimate of the number of gnatcatchers in the United States is approximately 2,900 pairs, with two-thirds (approximately 1,900) occurring in San Diego County (Fish and Wildlife Service 1996a). The County Subarea includes a significant portion of the total distribution and range for the gnatcatcher, which is limited to southwestern California and northern Baja California, Mexico. The MSCP database indicates that there are 1,369 occurrences of this species distributed throughout sage scrub habitat within the County Subarea. A population viability analysis (PVA) prepared for the California gnatcatcher within the entire MSCP study area (Mock 1993) indicates that the viability of the MSCP metapopulation is likely dependent upon five major concentrations, three of which are within the County Subarea (the Otay and Sweetwater concentrations in the South County segment and the Lake Hodges concentration in the Lake Hodges segment). These large concentrations of gnatcatchers likely act as source populations to relatively smaller populations, while the smaller interconnected populations positioned between the source populations likely enhance interpopulation connectivity and contribute to the size and viability of the metapopulation. Interstate 8 is probably a significant impediment to the regular genetic exchange between northern and southern San Diego County gnatcatcher populations. In the Lakeside area, just north of Interstate 8, an archipelago of habitat patches currently forms a tenuous linkage between the Otay/Sweetwater concentrations and northern populations.

To date the Service has approved impacts to gnatcatchers through section 4(d) interim Habitat Loss Permits, section 7 consultations, HCP's, and six NCCP/HCP Subregional and Subarea Plans in Southern California. Interim 4(d) project approvals, section 7 consultations, and project specific section 10 permits have resulted in impacts to 320 pairs of gnatcatchers and 4,880 acres of coastal sage scrub. Minimization measures and mitigation for these impacts have resulted in the conservation and management of an estimated 9,800 acres of habitat. Approved Subregional and Subarea Plans could result in impacts over the 50 year life of the permits up to an estimated 628 occurrences (see discussion in MSCP Biological Opinion on limitations of estimating gnatcatcher impacts on the basis of MSCP database occurences) of gnatcatchers and 17,900 acres of sage scrub habitat within southern California. Minimization measures and mitigation for these impacts will result in the conservation and management of 114,450 acres of habitat including 50,700 acres of sage scrub that supports an estimated 65 percent of the occurrences of gnatcatchers.

2. Chaparral including Southern Maritime Chaparral, Southern Mafic Chaparral, Chamise Chaparral, Tecate Cypress Forest, and Southern Mixed Chaparral

A total of 79,823 acres of chaparral currently exist in the County Subarea. Of this, 59 acres

consist of southern maritime chaparral: with seven acres in the Lake Hodges segment and 52 acres in the Metro-Lakeside-Jamul segment. The remaining 79,764 acres of other chaparral types include 1,992 acres in the Lake Hodges segment, 56,628 in the Metro-Lakeside-Jamul segment, and 21,628 acres in the South County segment. Tecate cypress forest occurs on 5,710 acres in the County Subarea: 71 acres in the Metro-Lakeside-Jamul segment and 5,639 acres in the southern segment.

a. Southern Maritime Chaparral

Del Mar Manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*) [Endangered]

This species is limited in distribution to coastal San Diego County and northern Baja California, Mexico. The MSCP database includes 12 occurrences of Del Mar manzanita within the County Subarea. All these occurrences are within the Lake Hodges segment, in the Santa Fe Valley Specific Plan Area. The Biological Technical Report for the Santa Fe Valley Specific Plan Area (Ogden 1995) indicates the presence of 447 individuals on-site. This represents approximately five or six percent of the remaining individuals of this species in the United States, based on an estimated population size of 7,500 to 8,700 individuals (Roberts 1993).

Encinitas Baccharis (*Baccharis vanessae*) [Threatened]

This species is only known to occur in coastal San Diego County (with one exception on the Cleveland National Forest). The MSCP database includes 35 occurrences of Encinitas baccharis in the County Subarea. Two of the three major populations of this species within the MSCP planning area occur within the County Subarea (4S Ranch/Lake Hodges, Iron Mountain). An additional population that was not included within the MSCP database but occurs within the County Subarea consists of approximately 30 or 40 individuals reported from south of Interstate 8 in the Crest area (California Natural Diversity Data Base CNDDB occurrence # 24).

b. Chamise, Southern Mixed, and Southern Mafic Chaparrals

Nevin's Barberry (*Berberis nevinii*) [Proposed Endangered]

Nevin's barberry does not occur naturally in the MSCP planning area, and its survival is dependent upon conservation efforts outside of the MSCP planning area.

Dehesa Beargrass *(Nolina interrata*) [Proposed Endangered]

All known populations of Dehesa beargrass occur within a six square mile area in the Dehesa Valley, east of El Cajon, in southern San Diego County within the County Subarea Plan. The three major populations within the MSCP planning area are in the

County Subarea. The MSCP database includes 34 occurrences of this species in the County Subarea. Table 4-3 of the County Subarea Plan indicates that 19 of these occurrences are within the Metro-Lakeside Jamul segment, south of Interstate 8. The remaining 14 occurrences are within the South County segment.

3. Grasslands and Clay Soils

Table 1-2 of the County Subarea Plan indicates that there are 10,864 acres of grassland in the County Subarea, including 1,153 acres in the Lake Hodges segment, 5,373 acres in the Metro-Lakeside-Jamul segment, and 4,337 acres in the Southern segment. The database does not distinguish native from non-native grassland. Native grasslands are not distinguishable from other grasslands on aerial photography, which was the major source of information used to generate the vegetation maps for the MSCP planning area. As such, native grasslands could not be separated from grasslands in general for this effort.

GIS data indicate that 10,407 undeveloped acres of clay substrate exist in the County Subarea. All of the habitats found on these clay substrates are not grasslands; however, several plant species which are covered by the MSCP are restricted to clay substrates. These include San Diego thornmint, Otay tarplant, thread-leaved brodiaea, San Diego goldenstar, and variegated dudleya.

Mountain Plover (*Charadrius montanus*) [Category 1 Candidate]

Although this species is not known to breed in California, wintering mountain plovers have been documented in the past within the MSCP Planning Area. The species also primarily winters in Nevada and Utah. The MSCP database includes no site specific information on this species. However, this species is known to utilize grassland, open fields and agricultural land within Otay Mesa and the mouth of the Otay River for roosting and foraging during fall migration. Unitt (1984) described the mountain plover as a common to very common but localized winter visitor to San Diego County. However, local ornithologists have searched for this species and have found none west of the coastal mountains in San Diego County over the last four years (pers. comm., Guy McCaski, 1998)..

San Diego thornmint (*Acanthomintha ilicifolia*) [Proposed Endangered]

The MSCP database includes 25 occurrences of San Diego thornmint in the County Subarea. The County Subarea includes a significant portion of the range for this species, which is endemic to San Diego county and northwestern Baja California, Mexico. Based on the Service's most recent analysis, approximately 150,000 individuals are distributed over about 30 sites in San Diego County from Carlsbad east to Escondido, and south to Otay Mesa and Alpine (Roberts, pers. comm., 1997). The number of individuals in a population can fluctuate significantly from year to year,

depending on rainfall and other factors. New populations are also still being discovered. All eight of the major populations of San Diego thornmint within the MSCP planning area occur in the County Subarea. The location of major populations of this species include Sycamore Canyon, Lake Hodges, El Capitan, Jamul Mountains, Asphalt Inc. in the Lakeside area, Sky Mesa Ranch, McGinty Mountain, and Otay Lakes.

Otay Tarplant *(Hemizonia conjugens)* [Proposed endangered]

The MSCP database includes 129 occurrences of Otay tarplant in the County Subarea. The largest populations of this species within the MSCP Planning Area occur at Rancho San Miguel, Proctor Valley, Dennery Canyon/Cal Terraces, Rice Canyon and Poggi Canyon. The population at Rancho San Miguel (includes the Buie and SDG&E property) is by far the largest known throughout its range, consisting of approximately 223,000 individuals. Population numbers for these sites are estimated as follows: Proctor Valley (10,000 individuals), Dennery Canyon/Cal Terraces (15,000 individuals), Rice Canyon (50,000 individuals), and Poggi Canyon (11,000 individuals) (F. Roberts, pers. comm., 1998). Moderate and minor sized populations occur in Otay River Valley, Wolf Canyon, Jamacha Hills, Salt Creek area, Long Canyon, North Shore of Sweetwater Reservoir, Spring Canyon, Otay Mesa, and Otay Ranch. Known populations of these areas range from 1,000 to 5,000 individuals depending upon the site.

Thread-leaved brodiaea (*Brodiaea filifolia*) [Proposed Endangered]

Although Table 1-3 of the County Subarea Plan does not indicate any occurrences of this species in the County Subarea, one small population of this species was identified in the Environmental Impact Report for 4S Ranch (Dudek 1997b). In November 1997, this population was removed from the proposed development area (nine bulbs were found during the excavation) and transplanted into biological open space on-site. Twenty-seven populations of this species are known to exist, with the majority of the remaining populations being found on the Santa Rosa Plateau in western Riverside County, and in the Vista-San Marcos-Carlsbad region of northwestern San Diego County.

4. Wetland Habitats

a. Freshwater Marsh/Riparian/Open Water/Reservoirs

The County Subarea includes 343 acres of freshwater marsh, 4,346 acres of oak riparian forest, 526 acres of riparian forest, 26 acres of riparian woodland, 1,118 acres of riparian scrub, and 282 acres of open water. The major riparian drainages within the County Subarea occur along the San Dieguito, Sweetwater, San Diego, and Otay Rivers.

Arroyo toad *(Bufo microscaphus californicus)* [Endangered]

The MSCP database includes 15 occurrences of arroyo toads in the County Subarea. The arroyo toad is known to occur in the County Subarea within the Otay River, Sweetwater River (between Sweetwater Reservoir and Loveland Reservoir), San Vicente Creek, and Cottonwood Creek in Marron Valley.

Southwestern willow flycatcher *(Empidonax traillii extimus)* [Endangered]

This species breeds in southern California, Nevada, Arizona and New Mexico. Only 450 flycatcher territories, many of which consisted of unpaired males, were detected in the United States in 1995. Within the MSCP planning area, this species has been known to breed along the San Dieguito, San Diego, and Tijuana River drainages. The MSCP database includes no extant occurrences of this species in the County Subarea.

Critical Habitat for the southwestern willow flycatcher was formally designated on July 22, 1997 (62 FR: 39129). One of the areas designated as critical habitat for this species is the San Dieguito River Valley from Interstate 15 westward to Interstate 5. A portion of this area is within the Lake Hodges segment of the County Subarea Plan. The rule, which is hereby incorporated by reference, presents specific information regarding which portions of these rivers are designated as critical habitat.

Least Bell's vireo *(Vireo bellii pusillus)* [Endangered]

The MSCP database for the County Subarea includes 145 occurrences of least Bell's vireo in the County Subarea. The largest populations in the County Subarea occur along the Sweetwater River and Jamul-Dulzura Creeks.

Critical habitat was formally designated for the least Bell's vireo on February 2, 1994 (59 FR: 34982) . In the County Subarea, critical habitat for the least Bell's vireo is present along Sweetwater River and Jamul-Dulzura Creeks. The rule, which is hereby incorporated by reference, presents specific information regarding which portions of these rivers are designated as critical habitat.

Bald Eagle (*Haliaeetus leucocephalus*) [Threatened]

Bald eagles are rare winter visitors associated with open water and marshes primarily in the vicinity of eastern water reservoirs. Bald eagles require foraging sites which include perches adjacent to open water and nearby perching and roosting sites. The MSCP database includes 4 occurrences of the bald eagle in the County Subarea.

California red-legged frog *(Rana aurora draytonii)*

[Threatened]

Currently, this species is known from about 190 streams or drainages in 15 counties in central and southern California. Only four population localities are currently known to be extant in southern California. This species has not been found in the MSCP Planning area for many years, although few directed surveys have been performed. Riparian habitat within the County Subarea provides potential habitat for this species.

Willowy monardella (*Monardella linoides* ssp. *viminea*) [Proposed Endangered]

The MSCP database includes six occurrences of willowy monardella in the County Subarea. Major populations of this species are present near Otay Mountain and Marron Valley. A major population in the Sycamore Canyon area also extends partially into the County Subarea.

b. Coastal Wetlands/Southern Foredunes.

The County Subarea contains no coastal wetlands or southern foredunes. Federally listed MSCP covered species that use coastal wetlands and/or southern foredunes include American Peregrine Falcon (*Falco peregrinus anatum*), California Brown Pelican (*Pelicanus occidentalis californicus*), Light-Footed Clapper Rail (*Rallus longirostris levipes*), California Least Tern (*Sterna antillarum browni*), Western Snowy Plover (*Charadrius alexandrinus nivosus*), Salt Marsh Bird's Beak (*Cordylanthus maritimus* ssp. *maritimus*), and Coastal Dunes Milk-Vetch (*Astragalus tener* var. *titi*). Of these, only the American peregrine falcon has any MSCP database point localities in the County Subarea.

Peregrine Falcon (*Falco peregrinus anatum*) [Endangered]

The American peregrine falcon occurs throughout much of North America, from the subarctic boreal forests of Canada and Alaska south into Mexico. Within the County Subarea, peregrine falcons have been observed foraging in San Diego River Valley, over Lake Hodges, and at San Vicente and Sweetwater Reservoirs. American peregrine falcons have not been documented nesting in the County Subarea. The MSCP database includes 6 occurrences of this species for the County Subarea. Critical Habitat was formally designated for the peregrine falcon, however, no designated Critical Habitat occurs within the MSCP Planning Area.

California brown pelican (*Pelicanus occidentalis californicus*) [Endangered]

The California brown pelican is found in marine habitats which range from open ocean to inshore waters, estuaries, bays and harbors. They commonly use undisturbed beach bluffs, breakwaters, and jetties near coastal waters as roosting areas and forage nearby. Brown pelicans range along the coast from British Columbia south to Central America.

There is foraging and roosting habitat for this species in the MSCP Planning area but no known colony occurs in San Diego County. No occurrences and no potential habitat for this species has been identified within the County Subarea Plan

c. Vernal Pools

The Draft Recovery Plan for the Vernal Pools of Southern California (Bauder et. al 1997) recognizes eight distinct management areas in southern California which comprise locally variable vernal pool complexes. Two of these management areas are at least partially located within the County Subarea: the San Diego southern coastal mesa management area and the San Diego inland valleys management area. The southern coastal mesa vernal pools include all isolated pools and complexes from the Sweetwater River south to the Mexican border, including the eastern Otay Mesa complex and vernal pools in the vicinity of Otay Lakes. Federally listed vernal pools species in this management area include San Diego button-celery, spreading navarretia, California Orcutt grass, San Diego mesa mint, Otay mesa mint, San Diego fairy shrimp, and Riverside fairy shrimp. The inland valley management area includes pools in the San Dieguito River Valley, Marron Valley, and Proctor Valley. The draft Recovery Plan states that the majority of these pools are isolated to a degree from extreme maritime influence by topography, and occur more than nine kilometers from the coast. These pools support San Diego button-celery, spreading navarretia, and San Diego fairy shrimp.

In April 1997, the Fish and Wildlife Service approved the Vernal Pools Stewardship Project, which will allow the Service to implement the Vernal Pools Unit of the San Diego National Wildlife Refuge. The Service is presently in the process of acquiring vernal pools within the MSCP Plan Area on Del Mar Mesa. The purpose of this refuge is to provide for the long-term conservation of vernal pool habitats and their associated flora and fauna in the San Diego region. The proposed refuge will encompass 8,223 acres, including vernal pool habitat on Del Mar Mesa, Lopez Ridge, Naval Air Station/Marine Corps Air Station (NAS/MCAS) Miramar and adjacent areas, Montgomery Field, Sweetwater and Otay reservoirs, and Otay Mesa. The refuge will allow for the Service's acquisition and management of vernal pool habitat.

San Diego fairy shrimp (*Branchinecta sandiegonensis*) [Endangered]

A majority of the known occurrences of San Diego fairy shrimp are in San Diego County. The San Diego fairy shrimp is known to occur in fewer than 70 vernal pools within 11 vernal pool complexes in coastal San Diego County (Final Rule). Site-specific data on this species was not included in the MSCP database but the species is known to occur in vernal pools throughout the MSCP planning area, including pools on Otay Mesa and in Proctor Valley (Bauder et. al 1997), and in the Santa Fe Valley SPA (County of San Diego 1995).

Riverside fairy shrimp *(Streptocephalus woottoni)* [Endangered]

This species occurs in vernal pools and small, long duration ponds within a highly restricted range, from Riverside County southward into northern Baja California, Mexico. Riverside fairy shrimp occur in several vernal pool complexes on Otay Mesa (Bauder et. al 1997) within the City of San Diego's Subarea Plan. Table 4.3-1 of the MSCP DEIR/EIS indicates that there are three occurrences of Riverside fairy shrimp in the MSCP planning area, although none are documented in the database for the County Subarea.

San Diego button-celery *(Eryngium aristulatum* var. *parish)* [Endangered]

San Diego button-celery occurs in vernal pools from the Santa Rosa Plateau in Riverside County, California, south into northern Baja California, Mexico. Table 4.3-1 of the MSCP DEIR/EIS indicates that there are 222 occurrences of this species in the MSCP planning area, and the GIS database for the County Subarea identifies 49 of these occurrences, with major populations present on Otay Mesa, near Otay Lakes, and in Proctor Valley.

San Diego mesa mint *(Pogogyne abramsii)* [Endangered]

This species has a very limited distribution, occurring only in vernal pools of coastal San Diego County from Del Mar Mesa southward to Mira Mesa and Kearny Mesa, with a few populations in western Tierrasanta. Most of these populations occur outside the MSCP planning area because they are on military lands on Miramar. Table 4.3-1 of the MSCP DEIR/EIS indicates 62 occurrences of this species in the MSCP planning area, but the database indicates that none of these occurrences are found in the County Subarea.

Otay Mesa mint *(Pogogyne nudiuscula)* [Endangered]

This species is limited to vernal pools on Otay Mesa in southern San Diego County, with one historical population documented from Tijuana, Mexico. Table 4.3-1 of the MSCP dEIR/EIS indicates that there are 89 occurrences of this species in the MSCP planning area, and the database includes 75 of these occurrences in the County Subarea.

California Orcutt grass *(Orcuttia californica)* [Endangered]

The current known distribution of this species includes coastal southern California from Los Angeles County (one occurrence) southward into northern Baja California, Mexico. Although the species typically occurs in vernal pools, in Riverside County it is also found on alkali playas. Table 4.3-1 of the MSCP DEIR/EIS indicates that there are 8 occurrences of this species in the MSCP planning area, and the database includes one of these occurrences in the County Subarea. The species occurs in vernal pool

complexes on Otay Mesa.

Spreading navarretia (*Navarretia fossalis*) [Proposed Threatened]

This species is known from widely disjunct and restricted populations extending from Los Angeles County east to the western lowlands of Riverside County, south through coastal and foothill San Diego County into northern Baja California, Mexico. Fewer than 30 populations exist in the United States, and nearly 60 percent of these populations are concentrated in three locations, (with the majority in Riverside County) one of which is on Otay Mesa (Bauder et. al 1997). Within the MSCP Plan area this species is known from the following locations (vernal pool complex identification letter follows in parenthesis): California Terraces (J2), Robinhood Ridge (J5), South Otay Mesa (J13), Anderson property (J14), City of San Diego owned property (J16-17), J22 and J28w pools (historic), Otay Ranch (J29-31), Proctor Valley (R1), South of Sweetwater Reservoir (S1-3), Otay landfill vernal pools (K2), and one mitigation pool on the BB complex. The MSCP database includes five occurrences of this species in the County Subarea. Known occurrences within the County Subarea include: J22 pools, Proctor Valley R1 pools, South of Sweetwater Reservoir S1-3 pools, and the K2 landfill vernal pools.

B. <u>Listed and Proposed Species which are not Covered by the MSCP Plan</u>

The following discussion addresses the four federally listed and proposed species which are known to occur or potentially occur in the County Subarea but are not covered under the MSCP Plan or the County Subarea Plan.

1. Quino checkerspot butterfly (*Euphydryas editha quino*) [Endangered]

The historic range of this butterfly extends from the Santa Monica Mountains in southern California, southward to extreme northwestern Baja California, Mexico. Four extant populations are known within the United States and one extant population is located in Mexico. The United States populations are located in San Diego and western Riverside Counties, California. The largest known population is found in the Otay/Tecate Mountain area, within the County Subarea on lands administered by the Bureau of Land Management and on Cornerstone Lands owned by the City of San Diego. No estimates of population size for the Quino checkerspot are currently available.

2. Pacific Pocket Mouse (*Perognathus longimembris pacificus*) [Endangered]

This species' historical distribution occurred approximately within two miles of the immediate coast at eight locations from Marina Del Rey and El Segundo in Los Angeles County south to the vicinity of the Mexican border in San Diego County. Known extant populations of this species are only found on the Dana Point Headlands in Dana Point (Orange County) (Brylski

1993) and on Camp Pendleton (San Diego County). Numerous recent surveys within the historic range of the species have failed to detect additional extant populations. There are no documented historical localities of this species from the County Subarea, and the Subarea is probably too far inland to provide suitable habitat for the species. However, there is insufficient data available to discount the presence of this species within the County Subarea, and any newly discovered populations of this highly endangered animal would be significant.

3. Orcutt's spineflower (*Chorizanthe orcuttiana*) [Endangered]

Historically, this species was known from 10 occurrences ranging from Point Loma, Kearny Mesa, Del Mar, and Encinitas, San Diego County (CDFG 1992). Only two of these are believed to be extant: one on Point Loma and one at Oak Crest Park in Encinitas. No historical occurrences of this species are documented from the County Subarea, and no suitable habitat is believed to occur. However, there is insufficient data available to discount the presence of this species within the County Subarea, and any newly discovered populations of this highly endangered plant would be significant.

4. Mexican flannelbush (*Fremontodendron mexicanum*) [Proposed Endangered]

Little information is available on the status of historic populations of Mexican flannelbush; however, the species is currently known from fewer than 10 native locations in the United States. Within the MSCP study area the one known population of this species is in the Cedar Creek area of Otay Mountain. Approximately 50 percent of this population is in a Bureau of Land Management Area of Critical Environmental Concern. The remainder of this population is in proposed open space on Otay Ranch within the South County Segment of the County's Subarea Plan. Two native occurrences are historically known from Mexico; however, only one is believed to be extant (Reiser 1996).

C. Additional Covered Species

A total of 57 covered species which are not currently listed, proposed, or candidates for listing may be affected by the proposed action. Accounts of the status, distribution, and habitat affiliations of these additional covered species are presented in Table 1 of the MSCP Biological Opinion. These accounts are hereby incorporated by reference. Table 1 of this Biological Opinion provides a summary of occurrences within the County's Subarea Plan.

IV. EFFECTS OF THE PROPOSED ACTION

The general direct and indirect effects of the MSCP Plan, and the habitat- and species-specific analyses for the entire MSCP Plan, are described in the MSCP BO, and are incorporated herein by reference. The following is a habitat- and species-specific analysis focusing on the County's Subarea Plan. This analysis addresses potential impacts to each of the major habitat types which occur within the County Subarea, and the federally listed, proposed, and candidate

species which are dependent upon each habitat type and covered under the County Subarea Plan. Following this discussion, anticipated effects to non-covered listed species are addressed, and then a general discussion is provided regarding effects to covered, unlisted species. Table 1 of this BO indicates the number and percent of point localities preserved for each species within the County Subarea.

A. Covered Species which are Federally Listed, Proposed for Listing, or Candidates for Listing

1. Coastal Sage Scrub, Maritime Succulent Scrub, and Southern Coastal Bluff Scrub

Within the County Subarea, up to 27,072 acres (38 percent) of the remaining coastal sage scrub, 1,794 acres (58 percent) of the coastal sage scrub/chaparral habitat, and 127 acres (45 percent) of the maritime succulent scrub could be developed. There is no southern coastal bluff scrub present within the County Subarea Plan. The total loss of scrub habitats resulting from implementation of the County Subarea Plan will amount to approximately 28,993 acres (39 percent). The remaining 62 percent (44,254 acres of coastal sage scrub, 158 acres maritime succulent scrub, and 1,325 acres coastal sage scrub/chaparral) will be protected and managed in perpetuity.

Coastal California Gnatcatcher (*Polioptila californica californica*)

The effects of implementing the County Subarea Plan include direct impacts resulting from loss of scrub habitat (coastal sage scrub, maritime succulent scrub, and coastal sage/chaparral), as described above and indirect impacts to gnatcatchers as described in the MSCP Biological Opinion. The MSCP database indicates that out of the 1,369 known gnatcatcher occurrences within the County Subarea, 475 (35 percent) could be impacted, and 894 (65 percent) will be conserved. See the MSCP Biological Opinion for a discussion of the limitations with estimating gnatcatcher impacts on the basis of MSCP database occurrences ("point localities"). The County Subarea Plan is expected to result in preservation of approximately 45,737 acres of gnatcatcher habitat within the category 1 areas and Preapproved Mitigation Areas combined (hereinafter referred to as the "preserve planning area"). This acreage of preservation amounts to 62 percent of the existing gnatcatcher habitat in the County. Three of the five major gnatcatcher populations identified in the California gnatcatcher PVA for MSCP (Mock 1993) occur wholly or partially within the County Subarea. These populations will be conserved at the following levels: (1) Lake Hodges - 3,652 acres; (2) Otay/San Ysidro - 9,529 acres; and (3) San Miguel/Lower Sweetwater - 4,387 acres. It is anticipated that the majority of these populations will be conserved because the County Subarea will preserve 65 percent of the gnatcatcher occurrences in the planning area.

As discussed in the MSCP biological opinion, the MSCP Plan will result in the

conservation of 171,917 acres of multiple habitat types within identified core biological resource areas and linkages. Eighty-one percent of the core multiple habitat areas which support gnatcatchers within the MSCP Planning Area will be conserved in the MHPA. The proposed preserve includes approximately 73,756 acres (66 percent) of the habitat in the MSCP Planning area that is considered suitable for gnatcatchers. Overall, of the 2,814 known gnatcatcher point localities within the MSCP Planning area 1,819 (65 percent) will be conserved within the MHPA. Because of the limitations in the data on gnatcatcher localities, a model was developed to evaluate suitability of habitat throughout the MSCP Planning Area for the gnatcatcher. Based on this evaluation 30,273 acres (70 percent) of the very high value gnatcatcher habitat and 4,609 acres (62 percent) of the high value gnatcatcher habitat will be conserved in the MHPA.

Indirect effects such as fragmentation and edge effects could impact many of the remaining populations. These fragmentation and edge effects will be minimized through implementation of design criteria on each development and area specific management directives to: (1) reduce edge effects; (2) minimize disturbance during the gnatcatcher nesting season; (3) develop fire protection measures to reduce the potential for habitat degradations due to unplanned fire; and (4) implement management measures to maintain or improve habitat quality including vegetation structure. Table 3-5 of the MSCP Plan (Attachment 2 to this BO) also require that no clearing of habitat occupied by gnatcatchers may occur within the County's MHPA between March 1 and August 15.

To adequately conserve the gnatcatcher (and other coastal sage scrub-associated species), the MSCP Plan incorporated conservation planning principles of the NCCP Conservation Guidelines. The MSCP BO (pages 68 and 69) states these guidelines and explains how the MSCP Plan, which includes the County Subarea Plan, is consistent with these guidelines. By creating reserves that consist of large habitat blocks, assuring connectivity between these blocks, and employing adaptive management, the MSCP Plan and the County Subarea Plan are expected to adequately minimize and mitigate impacts to the California gnatcatcher.

2. Chaparral including Southern Maritime Chaparral, Southern Mafic Chaparral, Chamise Chaparral, Tecate Cypress Forest, and Southern Mixed Chaparral

Within the County Subarea Plan, the proposed permit action will authorize the loss of up to 39,880 (50 percent) of the remaining chaparral. Approximately 39,884 acres of chaparral are expected to be preserved and managed in perpetuity within the County Subarea Plan. The proposed County Subarea Plan will conserve five acres (nine percent) of the remaining 59 acres of southern maritime chaparral within the County Subarea Plan. Overall, 1,111 (67 percent) acres of southern maritime chaparral will be conserved within the entire MSCP

Planning area. The County Subarea Plan could result in the loss of up to 121 acres (two percent) of the 5,710 acres of Tecate cypress forest within the County Subarea.

Many of the species within chaparral and Tecate cypress forest are fire adapted. The disruption of natural fire cycles could potentially threaten the remaining habitat, but framework management plans to be developed for individual County Subareas will include measures to minimize impacts related to fire control and fire frequency that could affect covered species. Area specific management directives must also be prepared and implemented as logical and discrete areas of land are committed to permanent preservation by the County. Edge effects will be minimized within the preserve through required implementation of area-specific management directives which must address measures to control human impacts at the urban interface including fuel modification zones, non-native species, and trampling. The adaptive management process will provide for the incorporation of new information, as determined through research, monitoring, and ongoing management, into preserve and species management actions.

Del Mar manzanita (*Arctostaphulos glandulosa* ssp. *crassifolia*)

Table 1-3 of the County Subarea Plan indicates that the anticipated conservation within the County Subarea would include 15.1 of the occurrences of Del Mar manzanita currently documented in the database. The preserve would therefore include at least 60 percent of the 25 Del Mar manzanita occurrences within the County Subarea that are currently documented in the MSCP database. All the County Subarea's documented occurrences of this species are in the Santa Fe Valley Specific Planning Area. The Biological Resources Technical Report for the Santa Fe Valley Specific Plan Area (Ogden 1995) indicates that 31 out of 447 (9.2 percent) of the Del Mar manzanita on-site would be lost due to development. The information provided in the Santa Fe Valley SPA EIR (90.8 percent preservation) differs from the results of the MSCP database analysis (60 percent preservation). The site specific information in the EIR provides a more accurate impact assessment because the MSCP analysis is based on point localities, and each locality impacted or preserved can represent from one to many individuals. Therefore, expected impacts resulting from the County Subarea Plan is 31 individuals, and expected conservation is 416 individuals.

Most of the plants remaining after the proposed development occurs would be within 200 feet of development. Edge effects to this population will be minimized through area-specific management directives which are to include specific management measures (possibly including prescribed fire) that will promote germination of seeds, maintenance of diverse age class structure and reduction in the risk of catastrophic fire. There are no documented occurrences of Del Mar manzanita in the Metro-Lakeside-Jamul segment, but any newly found populations of this species within the segment would be 80 to 100 percent preserved as required in the County's BMO. Overall, the County Subarea Plan will result in a 90.8 percent conservation of known occurrences

of this species and will require management in perpetuity.

Encinitas Baccharis (*Baccharis vanessae)*

Table 1-3 of the County Subarea Plan indicates that 25 out of 35 documented occurrences of Encinitas baccharis would be preserved within the County Subarea (70 percent). 22 occurrences would be preserved on category 1 lands and 7 occurrences would be impacted on category 2 lands. Table 4-3 of the County Subarea Plan indicates that the anticipated conservation for Encinitas baccharis in the Metro-Lakeside-Jamul segment would include 2.4 occurrences (six are documented for the entire segment). Additionally, Encinitas baccharis qualifies as a Group A species as defined in the BMO, therefore the 4 other MSCP documented occurrences in the Metro-Lakeside-Jamul segment as well as the one known population that is not in the MSCP database (Crest area) and any newly discovered populations within the Metro-Lakeside-Jamul segment will be 80 to 100 percent preserved. With application of this requirement and consideration of the additional occurrence not documented in MSCP, the anticipated preservation level within the County Subarea is from 26.8 to 28 out of 36 occurrences (74 percent to 78 percent).

Out of the five or six major populations of Encinitas baccharis range wide, one occurs within the County Subarea (4S Ranch-Lake Hodges). Under the County Subarea Plan, 76 percent of the 4S Ranch-Lake Hodges population will be conserved. The proposed permit action assumes the loss of 24% of the point localities for this major population.

Edge effects will be minimized within the preserve through required implementation of area-specific management directives which must address measures to control human impacts at the urban interface including fuel modification zones, non-native species, and trampling. Specific management directives must consider male/female ratios and maintain a natural fire regime.

Nevin's Barberry (*Berberis nevinii*)

This species occurs within the northeastern region of San Diego County but is not known to naturally occur within the County Subarea. Nevin's barberry is on the MSCP list of narrow endemics species, and the County will therefore be required to avoid any newly discovered populations of this species within the Metro-Lakeside-Jamul segment and any major and minor amendment areas to the maximum extent practicable. Biological surveys within the category 1 and 2 lands within the South County Segment and the Lake Hodges Segment have not discovered any occurrences of this species. Where complete avoidance is infeasible, loss shall not exceed 20 percent of the population on site and additional in-kind preservation shall be required at a 1:1 to 3:1 ratio depending upon the significance of the population. Area specific management directives must be implemented to protect against detrimental edge effects.

Dehesa Bear-grass (*Nolina interrata*)

MSCP data indicate that out of 34 documented occurrences of this species within the County Subarea, 33 (97 percent) would be preserved. 14 occurrence would be preserved on category 1 lands and no impacts would occur on category 2 lands. Table 4-3 of the County Subarea Plan indicates that the anticipated conservation for Dehesa beargrass in the Metro-Lakeside-Jamul segment would include 19 occurrences (20 are documented for the entire segment). Dehesa beargrass qualifies as a Group A species as defined in the BMO, therefore the one other MSCP documented occurrence in the Metro-Lakeside-Jamul segment as well as any newly discovered populations within this segment will be 80 to 100 percent preserved. With application of this requirement, the anticipated preservation level for currently documented occurrences could increase to 100 percent.

Encroaching estate development is anticipated in the vicinity of known locations of this species, which could result in indirect impacts such as fragmentation and edge effects from fuel modification, invasion of exotic species, and fire management that could modify the natural fire regime. Area specific management directives will be implemented to protect against these detrimental edge effects. Management measures will include a requirement that surrounding habitats be maintained for pollinators.

3. Grasslands and Clay Soils

The County Subarea Plan will conserve 3,566 acres of grassland habitat, which constitutes 33 percent of the estimated current grassland acreage for the County Subarea. The MSCP database does not distinguish native grassland from non-native grassland. This is primarily because native grassland occurs in small patches that are difficult to distinguish from non-native grassland without detailed on-the-ground surveys, and this level of information was not available for the database. However, future project-level surveys are required to distinguish between native and non-native grassland, and native grassland will be treated as a Tier I habitat type, and require a higher mitigation ratio than non-native grassland which will be

treated as a Tier III habitat type. The high mitigation ratio requirement afforded native grassland will result in a higher preservation level than for non-native grassland.

The GIS database for MSCP indicates that 15 percent (73.4 acres/490.6 acres) of the clay soils in the Lake Hodges segment and 18 percent (1,489 acres/8,341 acres of the clay soils) in the South County segment will be preserved on category 1 land. There are approximately 1,575 acres of clay soil in the Metro-Lakeside-Jamul segment, but the amount that would be preserved within this segment under the County Subarea plan is unknown because the plan does not include a specific conservation goal for clay soils. Based on the assumption of 70 to 75 percent conservation of the Preapproved Mitigation Area and thus an approximate 70

percent conservation of clay soils within this area, 21 percent (328.5 acres/1,575 acres) of the clay soil within the Metro-Lakeside-Jamul segment and 18 percent (1,890.8 acres/10,406.6 acres) of the clay soil within the entire County Subarea would be conserved. This soil-based analysis is useful in determining the maximum amount of potential habitat that could be impacted and preserved for a particular clay-dependent species. However, the analysis is limited in that only a subset of the clay soil is likely to be suitable for those species, and a complexity of other factors besides soil type is likely to determine the suitability of habitat for the species.

Mountain Plover (*Charadrius montanus*)

The potential conversion to future development of approximately 15,587 acres (89 percent) of existing agriculture (excluding orchards) that occurs outside of Category 1 lands and the Preapproved Mitigation Area (Preserve Planning Area) and up to 7,298 acres (67 percent) of the grasslands in the County Subarea will reduce the winter foraging area available to the mountain plover. However, the majority of this acreage is not presently believed to be used by this species. The area historically used by this species within the County Subarea represents a minimal proportion of the species' total wintering range. This species has not been seen in cismontane San Diego County despite focused searches over the last four years (pers. com. McCaskie 1997), and implementation of the County Subarea Plan is not expected to significantly affect the species' survival.

San Diego Thornmint (*Acanthomintha ilicifolia*)

MSCP data indicate that the anticipated conservation within the County Subarea would include 15.1 (60 percent) of the 25 occurrences of San Diego thornmint currently documented in the database. Eight occurrences would be preserved on category 1 land, and six would be impacted on category 2 land. Table 4-3 of the County Subarea Plan indicates that the anticipated conservation for San Diego thornmint in the Metro-Lakeside-Jamul segment would include 7.1 occurrences (11 are documented for the entire segment). San Diego thornmint qualifies as a Group A species as defined in the BMO, therefore the 4 other MSCP documented occurrences in the Metro-Lakeside-Jamul segment as well as any newly discovered populations within this segment will be 80 to 100 percent preserved. With application of this requirement, the anticipated preservation level of currently documented populations is from 16.8 to 19 (67 percent to 76 percent) out of 36 occurrences.

Table 3-5 of the MSCP Plan indicates that 85 percent of the major populations of this species within the entire MSCP planning area will be preserved. The County Subarea includes all or portions of seven major populations of San Diego thornmint. Three major populations (Sycamore Canyon, Lake Hodges, and Otay Lakes) will be preserved on category 2 lands. The other four major populations (El Capitan, Jamul

Mountains, Asphalt Incorporated, and Sky Mesa Ranch) will be 80 to 100 percent preserved through the BMO, since San Diego thornmint is an MSCP narrow endemic species and qualifies as a Group A species as defined in the BMO.

Area specific management directives and the specific plan for Otay Lakes Resort are required to include specific measures to protect against detrimental edge effects to San Diego thornmint from the surrounding development.

Otay Tarplant (*Hemizona conjugens*)

MSCP data indicate that the anticipated impact would be 51.5 occurrences (40 percent) of the 129 known occurrences within the County Subarea. Conservation within the County Subarea would include 77.5 (60 percent) of the 129 occurrences of Otay tarplant currently documented in the database. All of the 77.5 preserved occurrences are on Category 1 land, and 51.5 occurrences would be impacted on Category 2 land. The MSCP database has no documented occurrences of Otay tarplant in the Metro-Lakeside-Jamul segment of the County Subarea Plan. Otay tarplant qualifies as a Group A species as defined in the BMO, therefore any newly discovered populations within the Metro-Lakeside-Jamul segment will be 80 to 100 percent preserved.

Impact analysis using more refined data provides the following information. The County Subarea includes three of five major populations of Otay tarplant: San Miguel, Proctor Valley, and Poggi Canyon. The two other major populations are Rice Canyon in the City of Chula Vista, and Dennery Canyon/Cal Terraces in the City of San Diego. Moderate sized populations within the County Subarea include Salt Creek, Otay River Valley, Wolf Canyon, Jamacha Hills, and Long Canyon. Based on information provided in environmental impact reports and from local experts regarding numbers of individuals, approximately 68 percent (223,000/326,000) of the Otay tarplant individuals occur in the San Miguel population (Roberts 1998). Approximately 37 percent of the individuals of this population would be preserved on Category 1 land, 12 percent would be conserved within Category 3 lands at 80-100 percent, and 51 percent would be lost as a result of proposed development on Category 2 land (Roberts 1998). Based on this information, impacts to the San Miguel population would result in loss of approximately 51 percent of the total estimated number of individuals of this species at this location. An alternate assessment of the number of Otay tarplants on the north parcel of San Miguel Ranch by Merkle and Associates results in an additional 10,000 individuals being conserved. Using this estimate approximately 49 percent of the San Miguel population would be impacted.

The two smaller major populations of Otay tarplant will be 60 percent conserved on Proctor Valley and 90 percent developed within Poggi Canyon, and ten percent preserved within a minor amendment area on the Otay landfill. The moderate sized populations receive varying levels of protection under the County Subarea Plan. The

Salt Creek and the Otay River Valley populations will be 100% preserved, (In accordance with Table 3-5 of the MSCP Plan coverage of this species requires avoidance of the major population in Otay Valley through sensitive design and development of the active recreation areas as described in the Otay Ranch Resource Management Plan), while the Wolf Canyon population will be 80 percent preserved. The Jamacha Hills population will be conserved within Category 1 lands and Long Canyon will be 80 to 100 percent conserved within Category 3 lands. Table 3-5 of the MSCP Plan states that at the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included. Proposed take authorization amendments will be subject to public review through the CEQA and NEPA processes, and take authorization amendments require approval by CDFG and the Service.

Indirect effects to Otay tarplant will occur to many of these populations. Adverse edge effects are expected to be minimized through the requirements in Table 3-5 of the MSCP Plan to implement area specific management directives including specific measures for monitoring of populations, adaptive management of preserves, and specific measures to protect against detrimental edge effects to this species.

As described in the species account, above, Otay tarplant appears to be restricted to Diablo clay soils. Approximately 20 percent of the undeveloped clay soils extant in the entire MSCP planning area, within the range for Otay tarplant (south of Interstate 8), will be preserved. Approximately 19 percent of the undeveloped clay soils south of Interstate 8 in the County Subarea are expected to be preserved. This soil-based analysis is useful in determining the maximum amount of potential habitat that could be impacted and preserved for the species. Part of the preserved clay soils is likely composed of Diablo clay which will provide opportunities through the adaptive management component of the plan to expand the existing populations of the Otay tarplant.

Additional conservation will occur in the Chula Vista Subarea Plan for the Rice Canyon South population (50,000 individuals). This population is preserved but is presently subject to edge effects, MSCP will require implementation of area specific management directives as described above to offset adverse edge effects. Conservation is expected to occur within the Sweetwater Authority Subarea Plan. This population is estimated at 2,000 individuals. Revised estimates for conservation within the City of San Diego Subarea Plan indicate that an estimated 11,000 individuals of the Dennery Canyon/Cal Terraces population will be conserved and managed within the City's Subarea Plan. The Spring Canyon population estimated at 4,000-5,000 individuals will also be conserved and managed in the City of San Diego Subarea Plan. Overall, the MSCP Plan will impact 38 - 40 percent of the extant population and conserve and manage an estimated 60 - 63 percent of the extant population of Otay tarplant.

Thread-leaved Brodiaea (*Brodiaea filifolia*)

The majority of known populations of this species occur within the Santa Rosa Plateau in western Riverside County and within northwestern San Diego County outside of the MSCP Planning Area. No major populations of thread-leaved brodiaea are known to occur within the County Subarea. One small population (nine bulbs) which was recently found on 4S Ranch, within the Lake Hodges segment of the County Subarea, has been transplanted to on-site open space. No other populations of this species are known to exist in the County Subarea. Thread-leaved brodiaea is on the MSCP list of narrow endemic species and qualifies as a Group A sensitive plant species as defined in the BMO, therefore the BMO requires that 80 to 100 percent of any newly discovered populations within the Metro-Lakeside-Jamul segment be preserved.

4. Wetland Communities

The proposed permit action does not authorize impacts to wetlands or wetland communities regulated by Section 404 of the Clean Water Act. Impacts to wetland communities under the Corps jurisdiction will continue to be addressed through the Section 404 permitting process and future Section 7 consultations as applicable. Take authorizations for federally listed species which occur within the jurisdiction of the U.S. Army Corps of Engineers will continue to be addressed through project specific Section 7 consultations. Through the IA, the Service will commit to working to streamline the 404 permitting process for projects that are consistent with the goals of the MSCP Plan and the County Subarea Plan, the 404(b)1 Guidelines, and the federal policy for no net loss of function and value.

Of the 2,013 acres of wetland habitat (not including oak riparian habitat) within the County Subarea, 1,366 acres (68 percent) will be conserved and managed within the preserve planning area. Vernal pool acreage is not included in this wetland community data. The Service (unpublished data) calculated that at least 71 percent of the remaining vernal pool habitat is within the preserve planning area (see vernal pools discussion below). For land outside of the preserve and BRCAs that is not regulated by Section 404, the proposed action may allow the loss and degradation of wetland-associated habitat and adjacent upland habitat. However, the MSCP Plan assumes a "no net loss" of wetlands policy. Thus, wetland habitat outside of the preserve and BRCAs will either be conserved through avoidance and minimization, or mitigated to ensure no net loss of habitat functions and values.

The County Subarea Plan also assumes no net loss of wetland habitat within the Subarea. Section 10.8.c. of the IA states that, for vernal pools in naturally occurring complexes and wetlands, impacts will be avoided to the maximum extent practicable. Unavoidable impacts will be minimized to the maximum extent practicable and mitigated to prevent any net loss of wetland function and value. Examples of unavoidable impacts include those necessary to allow reasonable use of a parcel entirely constrained by wetlands, roads where the only access to the developable portion of the site results in impacts to wetlands, and essential public facilities

(roads, sewer, water lines, etc) where no feasible alternative exists.

Wetland habitat outside the jurisdiction of the state and federal regulations will be mitigated in accordance with the requirements of the County's Subarea Plan. In Attachment K of the BMO, wetlands are classified as Tier 1 habitat and Attachment M of the BMO indicates that Tier 1 habitats have a designated mitigation ratio of from 1:1 to 3:1, depending upon the location of the impact area and the mitigation area within identified Biological Resource Core Areas. The County Subarea Plan has established these as both minimum and maximum ratios. The Service will not recommend any higher ratios as mitigation for unavoidable impacts to covered species provided that the requirements of the MSCP, County Subarea Plan, federal policy of "no net loss" of wetland functions and values, and section 404 (b)(1) guidelines under the Clean Water Act have been met. Mitigation is required to be in-kind mitigation and to prevent any net loss of wetland function and value (habitat type and use by sensitive species) of the impacted wetland. Three methods of wetland mitigation will be used to achieve no-net-loss: enhancement, restoration, and creation. Acquisition of existing wetlands may be used as partial mitigation to achieve the appropriate mitigation ratio, if combined with enhancement, restoration or creation at a minimum of 1:1 to achieve no net loss of wetland habitat.

It is anticipated that the continued application of wetland regulations outside the preserve will result in no change in the level of protection to wetland species outside the preserve compared to existing conditions. However, in limited cases these remaining resources may not be considered viable due to isolation and fragmentation. The MSCP plan also acknowledges the potential for increased development outside the designated preserve, which could result in more impacts to biological resources outside the preserve, including development of adjacent upland habitats that may be used by species typically found in wetlands.

Wetlands within the planning area could be affected by sand mining activities. Section 9.20 and 9.21 of the IA state that any new or expanded mining operations must be consistent with the BMO. Existing mining may continue in accordance with existing law, including applicable prohibitions on take under Section 9 of the ESA, and need not be in conformance with the BMO unless the project proponent wishes to be covered for incidental take under the County's take authorizations. No take of listed species will be permitted through the County Subarea Plan for ongoing mining activities until such existing operations obtain a Certificate of Participation. Certificates of Participation will be granted if the operations demonstrate consistency with the BMO, MSCP and County Subarea Plan as provided in Section 9.22 of the IA. New operations would be considered conditionally compatible with the preserve if: (1) impacts have been assessed and conditions incorporated to mitigate biological impacts and restore mined areas with native habitat; (2) adverse impacts to the preserve design have been avoided and covered species have been avoided, or impacts fully mitigated if impacts are unavoidable; and (3) requirements of other County land use policies and regulations have been satisfied. With these conditions, it is expected that impacts to covered wetland species from sand mining would be avoided or fully mitigated consistent with the BMO, MSCP and County Subarea Plan.

The following discussion of wetlands is divided into three groups: riparian, freshwater marsh, and open water; coastal wetlands; and vernal pools. For a list of covered species associated with wetlands see the draft EIR/EIS pp.4.3-41.

a. Riparian, Freshwater Marsh, and Open Water

Approximately 3,322 acres (55 percent) of the remaining riparian habitats, including 2,194 acres of oak riparian forest, 348 acres of riparian forest, 20 acres of riparian woodland, and 760 acres of riparian scrub within the County Subarea will be conserved and managed within the preserve planning area. Approximately 238 acres (69 percent) of the remaining freshwater marsh in County Subarea will also be conserved and managed in the preserve planning area. Impacts to riparian and marsh areas outside the preserve planning area will also be avoided, minimized, and mitigated under the BMO and existing state and federal wetland regulations, as described above under "wetland community". Thus, no net loss of function and value of wetland and open water is proposed within the County Subarea. The following covered species that are listed or proposed for federal listing are known to be associated with riparian and/or freshwater marsh habitat for at least some part of their life history. Of the 282 acres of open water within the County Subarea, 149 (53 percent) will be conserved and managed.

Arroyo Toad (*Bufo microscaphus californicus*)

The arroyo toad is known to occur in the County Subarea within the Sweetwater River (between Sweetwater Reservoir and Loveland Reservoir), San Vicente Creek, and Cottonwood Creek in Marron Valley. Table 3-5 indicates that the MSCP Plan will preserve all the known locations for this species, approximately 78 percent of the riparian wetland areas in suitable habitat, and 90 to 95 percent of the upland habitats within the Marron Valley area within the preserve planning area. The arroyo toad is on the list of rare, narrow endemic animal species known from San Diego County (Table 4-6 of the County Subarea Plan), therefore impacts to any populations of this species on category 3 lands must be avoided to the maximum extent practicable. Additional preservation of breeding habitat would be provided through requirements to avoid, minimize and mitigate impacts to wetlands as discussed above, and requirements for no net loss of wetlands. Take authorization holders will be required to minimize impacts to upland areas which provide habitat for this species which are within the preserve planning area or within one kilometer of riparian habitat which supports or is likely to support the arroyo toad.

Riverine systems that appear suitable for this species but have not had confirmed sightings include the San Diego River below El Capitan Reservoir, Jamul Creek, Dulzura Creek, Cedar Creek, and Sycamore Creek. These areas are important to the species because: (1) this habitat may be presently occupied, but the species' presence may not have been confirmed due to lack of available survey information; and (2) presently unoccupied riparian areas could be occupied in the future, since Riverine

systems are dynamic and the location of suitable habitat is expected to shift over time.

As discussed above, wetland habitats outside the Preserve planning Area will continue to be subject to participating jurisdictions' wetland guidelines and ordinances, and to the state and federal wetlands regulations and policy which provide for no net loss of function and value.

Activities and projects that may potentially affect the arroyo toad and its habitat are discussed in the MSCP Biological Opinion (pages 79 to 80). These effects will be minimized within the preserve through required implementation of area-specific management directives, which must address maintenance of arroyo toad populations through control of non-native predators including bullfrogs and sunfish, protection and maintenance of sufficient suitable low gradient sandy stream habitat (including appropriate water quality) to meet breeding requirements, and preservation of sheltering and foraging habitat within 1 km of breeding habitat which supports or is likely to support arroyo toads. Measures must also be implemented to control human impacts to the species within the preserve (e.g., public education, patrol, etc.). Monitoring plans must include site-specific monitoring of the seven known locations. Although management and monitoring is not expected to be provided for habitat outside the preserve planning area, indirect effects resulting in habitat degradation outside the preserve planning area are expected to be offset through management measures within the preserve planning area.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) and Least Bell's Vireo (*Vireo bellii pusillus*)

As stated above, 3,322 acres (55 percent) of the riparian habitat within the County Subarea will be preserved and managed within the preserve planning area.

Potential impacts to species and localities outside the preserve planning area are addressed in the MSCP BO. Direct impacts to wetland habitat will be subject to local regulations (the County Subarea Plan requires no net loss of wetland function or value within their County Subarea), Section 404 of the Clean Water Act, and CDFG Streambed Alteration Agreements. Direct effects to the flycatcher and vireo will be minimized through the requirement of avoidance, minimization, and mitigation including restrictions on clearing of occupied habitat during the breeding season.

Indirect effects may include both additional fragmentation and edge effects, increased levels of light and noise, loss of adjacent uplands, degradation of riparian habitat quality due to exotic plant and animals species (including domestic and feral animals), increase in brood parasitism by brown headed cowbirds (*Molothrus ater*), and increased disturbance from human activities.

Conditions for coverage of the flycatcher and vireo under the MSCP Plan specify that surveys will be required for these species, and that occupied habitat will be identified and avoided to the maximum extent practicable both inside and outside the preserve planning area. Unavoidable impacts will be mitigated in-kind to ensure no net loss of wetlands. Area specific management directives will include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, specific measures to protect against detrimental edge effects to this species, and monitoring.

The MHPA for the entire MSCP planning area will preserve eight of nine known localities of the southwestern willow flycatcher and 282 of 299 known localities for the least Bell's vireo. Table 1-3 of the County Subarea Plan indicates that 74 occurrences within the County Subarea are anticipated to be conserved and managed within the Preserve Planning Area. As mentioned above, the County Subarea Plan will require avoidance to the maximum extent practicable and mitigation consistent with the BMO. Occurrences outside of the Preserve Planning Area would be avoided but not receive any management through the MSCP.

All the designated critical habitat for the willow flycatcher within the Lake Hodges segment of the County Subarea plan, along the San Dieguito River, will be conserved and managed on category 1 land. Impacts to any critical habitat within the Metro-Lakeside-Jamul segment, along San Dieguito River west of the Lake Hodges segment, would be subject to federal regulations under section 404 of the Clean Water Act, including provisions for no net loss of wetlands. Critical habitat for the vireo along the Sweetwater River will be conserved and managed on category 1 land. Critical habitat along Jamul and Dulzura Creeks is within a major amendment area within the County's Subarea Plan and will require future Service review and approval. Therefore all designated critical habitat within the County Subarea will be protected directly by the MSCP preserve areas or continue to be under Service review through a future Major Amendment Area or section 7 consultation.

Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagles are rare winter visitors associated with open water primarily in the vicinity of eastern water reservoirs. Most of these reservoirs within the MSCP Planning Area are preserved within the City of San Diego's Cornerstone Lands Agreement, a component of the City's Subarea Plan. Within the County Subarea Plan Table 1-3 indicates that two of the four occurrences in the MSCP database for the County Subarea will be conserved. Occurrences represent foraging areas during overwintering periods or transients. Because this species is wide ranging, the significance of an occurrence is of less importance then maintaining adequate winter foraging areas. Approximately 387 of the 625 acres (62 percent) of potential bald eagle foraging habitat (freshwater marsh, open water) within the County Subarea would be preserved,

the remainder would be subject to local, state and federal regulations including the no net loss policy of wetland function and value.

The MSCP planning area is within the Pacific Recovery Region for the Bald Eagle (USFWS 1986). Direct impacts resulting from the MSCP Plan would not preclude successful implementation of the Bald Eagle Recovery Plan because: (1) no direct effects to this species are anticipated under the MSCP plan: (2) 89 percent of the foraging habitat for this species within the MSCP planning area would be preserved; and (3) no impacts will occur to habitat that is significant to the species' recovery because this species is only a rare winter visitor to the planning area.

California Red-legged Frog *(Rana aurora draytonii)*

The California red-legged frog has not recently been found in San Diego County, and is likely extirpated from the MSCP planning area. The County Subarea Plan proposes to preserve and manage 56 percent (3,560/6,377) of the suitable riparian habitat for this species in the preserve planning area (riparian and freshwater marsh). As discussed above, wetland habitats outside the Preserve Planning Area will continue to be subject to regulations pursuant to Section 404 of the Clean Water Act, and the federal wetland policy of no net loss of wetland value and function, although wetlands outside the preserve planning area will not be managed as part of the MSCP plan.

Activities and projects that may potentially affect the red-legged frog are addressed in the MSCP BO, pages 82 and 83. If this species were found to be extant on category 3 lands, impacts will be avoided to the maximum extent practicable as required in article VII.2.a. of the BMO for rare, narrow endemic animal species. Where complete avoidance is infeasible, projects will be designed to avoid any significant reduction in species viability. In accordance with Table 3-5 of the MSCP Plan, effects to this species will be minimized within the preserve through implementation of area-specific management directives to provide for management of any newly discovered populations. Management programs for the arroyo toad which include removal of non-native predators such as bullfrogs and sunfish will benefit the red-legged frog. Through adaptive management, preserve managers will be able to address necessary measures for any newly discovered populations within the preserve. In addition to wetland preservation and management, conservation and management of adjacent uplands will be likely within areas that are occupied by the arroyo toad (see toad discussion above), and this could also benefit the red-legged frog.

If this species were found to occur outside the preserve planning areas, wetlands avoidance and minimization guidelines within the County Subarea Plans and the U.S. Army Corps of Engineer guidance would be expected to preclude project impacts to this species. Although wetlands outside the preserve planning areas will not be managed under the MSCP Plan, adaptive management inside the preserve planning

areas is expected to offset indirect impacts outside these areas that would result from plan implementation.

Willowy Monardella (*Monardella linoides* ssp. *viminea*)

MSCP data indicate that the anticipated conservation within the County Subarea would include all of the 14 occurrences of Willowy monardella currently documented in the database to occur within the County Subarea. Thirteen of these occurrences would be preserved on category 1 land. Table 4-3 of the County Subarea Plan indicates that the anticipated conservation for willowy monardella in the Metro-Lakeside-Jamul segment would include the one documented occurrence in this segment. Willowy monardella qualifies as a Group A species as defined in the BMO, therefore any newly discovered populations within the Metro-Lakeside-Jamul segment will be 80 to 100 percent preserved. Area specific management directives for this species are required to include specific measures to protect against detrimental edge effects.

b. Coastal Wetlands and Coastal Southern Foredunes

No coastal wetlands or coastal southern foredunes have been identified within the County Subarea.

American Peregrine Falcon (*Falco peregrinus anatum*)

In San Diego County this species is primarily associated with coastal bays and reservoirs as a rare fall and winter visitor. The three known nest sites in the vicinity of the MSCP all occur outside of the planning boundary of the MSCP. This species is not presently known to nest within the County Subarea. Table 1-3 of the County Subarea Plan indicates that the anticipated conservation will include at least 2 of the occurrences of this species within the County Subarea. Occurrences represent foraging areas during overwintering periods or transients. This species tends to occur around open water areas which concentrate migrating waterfall or shorebirds.

Table 3-5 of the MSCP Plan states that the proposed action will likely result in loss of approximately 58 percent of the foraging habitat for this species within the MSCP planning area, and permanent preservation of the remaining 42 percent within the preserve planning area. This analysis does not take into consideration that wetland habitats outside the preserve planning area will receive additional protection through Section 404 of the Clean Water Act, or that many peregrine falcons have adapted to certain human-made structures and environments for foraging on urban prey items such as rock doves. Therefore, the amount of foraging habitat that will persist for this species is likely to be greater than the amount specified in Table 3-5.

The preserve includes at least 2 of the six occurrences within the MSCP database for

the County Subarea. The significance of an occurrence for this wide ranging species is of less importance than maintaining adequate winter foraging areas and potential future nesting areas. Although no coastal saltmarsh or saltpan habitat is present in the County Subarea, approximately 48,550 of the 83,206 acres (58 percent) of other types of suitable foraging habitat for the Peregrine falcon (freshwater marsh, open water, natural flood channel, coastal sage scrub, grassland) within the County Subarea would be preserved.

No species-specific conditions for coverage are included in the MSCP Plan or County Subarea Plan for the peregrine falcon. Impacts to this species on category 3 lands will be avoided to the maximum extent practicable as required in article VII.2.a. of the BMO for rare, narrow endemic animal species. Where complete avoidance is infeasible, the BMO will ensure that projects will be designed to avoid any significant reduction in species viability. Given the wide range of this species and the present limited use of the County Subarea it is not anticipated that the County Subarea Plan will adversely affect this species.

Regardless of the proposed foraging habitat loss, peregrine falcons have recovered sufficiently throughout their range and will not be adversely affected by the proposed action. The recovery goals as specified in the Pacific Coast Recovery Plan for the American peregrine falcon (USFWS 1982), in terms of the numbers of pairs, have been exceeded. The MSCP is not expected to result in direct effects to peregrine falcons, therefore the MSCP is consistent with the recovery plan for this species.

California brown pelican (Pelicanus occidentalis californicus)

The California brown pelican utilizes coastal waters, beaches, estuaries and bays within the MSCP study area. No potential habitat for this species has been identified within the County Subarea Plan. There are no reported occurrences of this species within the County Subarea, and appropriate breeding habitat is not believed to be present. Based on the proposed habitat preservation, application of local, state and federal wetlands regulations, and the potential impacts outlined above, the Service does not anticipate direct effects to this species from implementation of the MSCP Plan or the County Subarea Plan. Because the County Subarea is geographically separated from coastal areas containing suitable habitat for this species, the Service does not anticipate any indirect impacts resulting from the implementation of the County Subarea Plan. (Indirect effects resulting from potential water quality changes due to construction within the watershed of coastal bays and estuaries and nearshore marine environs is beyond the scope of this opinion). The County Subarea Plan will not have any effect on the effective implementation of the California Brown Pelican Recovery Plan.

Light-footed Clapper Rail (*Rallus longirostris levipes*)

The light-footed clapper rail utilizes coastal salt marshes dominated by cord grass and pickle weed, and some coastal freshwater marshes within the MSCP Planning Area. No potential habitat for this species has been identified within the County Subarea Plan. There are no reported occurrences of this species within the County Subarea, and appropriate breeding habitat is not believed to be present. Based on the habitat preservation, application of local, state and federal wetlands regulations, and the potential impacts outlined above, the Service does not anticipate direct effects to this species from implementation of the MSCP Plan or the County Subarea Plan. Because the County Subarea is geographically separated from coastal areas containing suitable habitat for this species, the Service does not anticipate any indirect impacts resulting from the implementation of the County Subarea Plan. (Indirect effects resulting from potential water quality changes due to construction within the watershed of coastal bays and estuaries and nearshore marine environs is beyond the scope of this opinion.) The County Subarea Plan will not have any effect on the effective implementation of the Light-footed Clapper Rail Recovery Plan.

California Least Tern (*Sterna antillarum browni*)

The California least tern nests along the California coastline in open sand, salt pans, or dried mudflats near lagoons or estuaries, and forages primarily in nearshore ocean waters and in shallow estuaries and lagoons. No potential habitat for this species has been identified within the County Subarea Plan. There are no reported occurrences of this species within the County Subarea, and appropriate breeding habitat is not believed to be present. Based on the MSCP habitat preservation, application of local, state and federal wetlands regulations, and the potential impacts outlined above, the Service does not anticipate direct effects to this species from implementation of the MSCP Plan or the County Subarea Plan. Because the County Subarea is geographically separated from coastal areas containing suitable habitat for this species, the Service does not anticipate any indirect impacts resulting from the implementation of the County Subarea Plan. (Indirect effects resulting from potential water quality changes due to construction within the watershed of coastal bays and estuaries and nearshore marine environs is beyond the scope of this opinion.) The County Subarea Plan will not have any effect on the effective implementation of the California Least Tern Recovery Plan.

Western Snowy Plover (*Charadrius alexandrinus nivosus*)

The breeding and wintering areas of the Western snowy plover occur on coastal sandy beaches, sand spits, dune-backed beaches, sparsely to unvegetated beach strands, open areas around estuaries, beaches at river mouths, dredge spoils and salt pond levees. No potential habitat for this species has been identified within the County Subarea Plan. There are no reported occurrences of this species within the County Subarea, and appropriate breeding habitat is not believed to be present. Based on the MSCP habitat preservation, application of local, state and federal wetlands regulations, and the

potential impacts outlined above, the Service does not anticipate direct effects to this species or proposed Critical Habitat from implementation of the MSCP Plan or the County Subarea Plan. Because the County Subarea is geographically separated from coastal areas containing suitable habitat for this species, the Service does not anticipate any indirect impacts resulting from the implementation of the County Subarea Plan. (Indirect effects resulting from potential water quality changes due to construction within the watershed of coastal bays and estuaries and nearshore marine environs is beyond the scope of this opinion.)

Salt-marsh Bird's-Beak (*Cordylanthus maritimus* ssp. *maritimus*)

There are no known locations for Salt-marsh bird's beak in the County Subarea. This species qualifies as a Group A sensitive plant species as defined in the BMO, therefore any newly discovered populations within the Metro-Lakeside-Jamul segment will be 80 to 100 percent preserved. However, there is no documented suitable habitat for this species within the County Subarea so based on the best available information this species is not likely to be present. Therefore approval of the permit and implementation of the County Subarea plan should have no effects on the species.

Coastal Dunes Milk Vetch (*Astragalus tener* var. *titi*)

There are no known locations for coastal dunes milk vetch in the County Subarea. This species qualifies for inclusion in Group A sensitive plant species as defined in the BMO, therefore any newly discovered populations within the Metro-Lakeside-Jamul segment will be 80 to 100 percent preserved. However, there is no documented suitable habitat for this species within the County Subarea so based on the best available information this species is not likely to be present. Therefore approval of the permit and implementation of the County Subarea plan should have no effects on the species.

c. Vernal Pools

Under the County Subarea plan impacts to vernal pools must be avoided to the maximum extent practicable. Unavoidable impacts will be minimized to the maximum extent practicable and mitigated to prevent any loss of function and value. Given the baseline for vernal pools and the covered species associated with vernal pools, any net loss will be significant. Of the 1,183 acres of mapped vernal pool habitat within the total MSCP planning area, over 847 acres (>72 percent) are within the preserve planning area. This mapping incorporated most of the known vernal pools. Of the 234.9 acres of mapped vernal pool habitat in the County Subarea, 166.4 (71 percent) is within the preserve planning area. The County subarea plan requires avoidance to the maximum extent practicable of pools throughout the County Subarea. Unavoidable impacts must be mitigated at a 1:1 to 3:1 ratio, and mitigation is required to prevent any net loss of vernal pool function and value (habitat type and use by sensitive

species) of the impacted vernal pool. As discussed above under the Wetlands section of this biological opinion the proposed permit action does not authorize impacts to wetlands or wetland communities regulated by Section 404 of the Clean Water Act. Impacts to wetland communities under the jurisdiction of the U.S. Army Corps of Engineers will continue to be addressed through the Section 404 permitting process and future Section 7 consultations as applicable.

Any impacts to Riverside fairy shrimp or San Diego fairy shrimp would be avoided to the maximum extent practicable as required in article VII.2.a. of the BMO for rare, narrow endemic animal species. Where complete avoidance is infeasible, projects would be designed to avoid any significant reduction in species viability.

The vernal pools within the preserve planning area will be conserved within areas of connected habitat representing a full range of vegetation communities that will better allow for the continuation of natural processes. The MSCP will also implement management and monitoring measures for vernal pools within the preserve, adding to the current level of protection for many complexes.

Conservation of the vernal pools on category 2 lands and outside the Preapproved Mitigation Area on category 3 lands will be achieved through the requirements of existing state and federal wetlands laws and the avoidance language in County Subarea plans. The potential for increased development pressures outside of the preserve planning area could result in increased indirect effects (e.g., fragmentation, edge effects, increased run-off/sedimentation, trash dumping, trampling) to vernal pools and associated covered species outside the preserve plan, but these indirect effects will potentially be offset by reduced indirect effects to vernal pools within the MHPA.

Riverside Fairy Shrimp (*Streptocephalus woottoni*)and San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)

The Riverside fairy shrimp has an extremely restricted distribution within a very limited number of vernal pools within Riverside, Orange, Los Angeles, and San Diego Counties, and two locations within Baja California, Mexico. Within San Diego County it is known to occur on Department of Defense land, Carlsbad, and Otay Mesa. Within the MSCP Planing Area, the Riverside fairy shrimp is only known to occur in several vernal pool complexes on Otay Mesa. The vernal pools on Otay Mesa are essential for this species. Three of the four known locations occur within the City of San Diego's Subarea Plan preserve. One occurrence is located outside the City preserve and has been addressed within Biological Opinion #1-6-95-F-35. One location is known to occur within the County Subarea Plan. This occurrence occurs within Category 1 lands and will be preserved and managed.

Habitat-based effects are addressed in the vernal pool discussion above. However, Riverside fairy shrimp appear to require specific conditions (see species account) that

restrict the species distribution to a relatively small number of pools. It is unknown how many vernal pools within the MSCP study area meet these conditions. The only other known location for this species in the MSCP study area consists of several vernal pools on Department of Defense land at Miramar; therefore, it is essential that vernal pool habitat with sufficient watershed is conserved.

The San Diego fairy shrimp is confined to vernal pool habitat, but is less restricted than the Riverside fairy shrimp and is found in more vernal pool complexes. San Diego fairy shrimp at the Santa Fe Valley site will be protected by special design designators incorporated into the Santa Fe Valley Specific Plan (County of San Diego 1995). The MSCP plan recognizes that additional regulatory protection will be provided for direct impacts to vernal pools through Section 404 of the Clean Water Act, and as applicable, Section 7 of the Endangered Species Act. Thus, any direct and indirect impacts to these two listed species will be addressed through future project specific analysis required as part of the Section 7 consultation process, and will be subject to no net loss of wetland acreage, function and value.

Indirect impacts to the Riverside and San Diego fairy shrimp are discussed in the MSCP BO, pages 92 and 93. Framework management plans and area specific management directives will include measures to protect against detrimental edge effects to vernal pools within the MHPA. Pools outside of the MHPA, although under the jurisdiction of several local, state and federal authorities, will not receive MSCP management funding and may continue to be adversely affected by indirect impacts. Many of the vernal pools within San Diego County occur on Department of Defense lands on MCAS Miramar and Camp Pendleton and both direct and indirect impacts will be subject to Endangered Species Act compliance.

San Diego Button-Celery (*Eryngium aristulatum* var. *parishii*)

MSCP data indicate that the anticipated conservation within the County Subarea would include 48 (98 percent) of the 49 occurrences of San Diego button-celery currently documented in the database. All the preserved occurrences would be on category 1 land, and the one impacted would be on category 2 land. The County Subarea Plan indicates that this species is not documented from the Metro-Lakeside-Jamul segment, although San Diego button-celery qualifies as a Group A species as defined in the BMO and, therefore, any newly discovered populations within this segment will be 80 to 100 percent preserved. All impacts to vernal pools with the San Diego button celery within the MSCP Study Area will continue to be addressed under Section 404 of the Clean Water Act and Section 7 of the Endangered Species Act, and must demonstrate no net loss of wetland value and function for this species. Area specific management directives are required to include specific measures to protect against detrimental edge effects.

San Diego Mesa Mint (*Pogogyne abramsii*)

There are no known populations of San Diego mesa mint in the County Subarea. However, this species qualifies as a Group A species as defined in the BMO, therefore any newly discovered populations within the Metro-Lakeside-Jamul segment will be 80 to 100 percent preserved. All impacts to vernal pools with the San Diego mesa mint will continue to be addressed under Section 404 of the Clean Water Act, and Section 7 of the Endangered Species Act, and must demonstrate no net loss of wetland value and function for this species. Area specific management directives are required to include specific measures to protect against detrimental edge effects.

Otay Mesa Mint (*Pogogyne nudiuscula*)

MSCP data indicate that the anticipated conservation of Otay mesa mint within the County Subarea would include 74 (99 percent) of the 75 occurrences of Otay mesa mint currently documented in the database. All the preserved occurrences would be on category 1 land, and the one impacted would be on category 2 land. This occurrence is a historic population that is no longer known to be extant. The County Subarea Plan indicates that this species is not documented from the Metro-Lakeside-Jamul segment, although Otay mesa mint qualifies as a Group A species as defined in the BMO and, therefore, any newly discovered populations within this segment will be 80 to 100 percent preserved. All impacts to vernal pools with Otay mesa mint within the MSCP Study Area will continue to be addressed under Section 404 of the Clean Water Act, and Section 7 of the Endangered Species Act, and must demonstrate no net loss of wetland value and function for this species. Area specific management directives for this species must include measures to: 1) protect against detrimental edge effects; 2) maintain surrounding habitat for pollinators; and 3) maintain pool watershed areas.

California Orcutt Grass (*Orcuttia californica*)

Within the MSCP Planning Area California Orcutt Grass is known to occur within four vernal pool complexes on Otay Mesa. Although Table 1-3 of the County Subarea Plan does not indicate an anticipated conservation level for California Orcutt grass, the one location of this species that is known to occur within the County Subarea on Otay Mesa will be preserved. Additionally, California Orcutt grass qualifies as a Group A species as defined in the BMO and, therefore, any newly discovered populations on category 3 lands will be 80 to 100 percent preserved. All impacts to vernal pools with the California Orcutt grass within the MSCP Study Area will continue to be addressed under Section 404 of the Clean Water Act, and Section 7 of the Endangered Species Act, and must demonstrate no net loss of wetland function and value for this species. Area specific management directives must include measures to: 1) protect against detrimental edge effects; and 2) maintain pool watershed areas.

Spreading Navarretia (*Navarretia fossalis*)

Within the MSCP Plan known locations of spreading navarretia will be impacted or conserved as follows: 1) impacts to vernal pools within California Terraces were addressed in Biological Opinion # 1-6-95-F-35. This project impacted two vernal pools with spreading navarretia, preserved one pool with this species and will restore three vernal pools to support spreading navarretia; 2) impacts resulting from the Robinhood Ridge project were analyzed in Biological Opinion #1-6-97-F-56. The Robinhood Ridge project will impact 62 basins totaling 0.077 acres of vernal pool basin area and preserve 71 basins totaling 0.1 acre. The one pool supporting this species will be conserved within the Robinhood Ridge mitigation area; 3) the J13 vernal pool that contains this species was preserved as a mitigation site through the section 404 process; 4) the J14 vernal pools occur within the City of San Diego's MHPA and therefore will be conserved. (This pool is presently being degraded due to vehicle traffic); 5) J16 and 17 are owned by the City of San Diego and are conserved within the MHPA; 6) J29-31 are located within the City of San Diego and occur partially within the MHPA and within the Otay Ranch project open space; 7) the R1 Proctor Valley vernal pools are owned by the City of San Diego and are conserved within the MHPA; 8) the S1-3 vernal pools occur within the Subarea Plan area for the Sweetwater Authority and are expected to be conserved; 9) the K2 vernal pools occur within the County's Otay landfill and are in a minor amendment area to the County's Subarea Plan and are subject to the BMO; 10) the J22 vernal pools occur within a minor amendment area with special requirements (V designator) to the County Subarea Plan and are subject to the BMO; and 11) the J28w vernal pool is a historic location within the City of San Diego's Subarea Plan outside of the MHPA and if still extant, will be subject to local, state and federal wetlands regulations. The Service is aware of potential impacts to one pool supporting spreading navarretia that could occur as a result of the proposed State Route 125 project. Presently the Service is working with Caltrans and Federal Highways to avoid, minimize and mitigate impacts to vernal pools and their associated sensitive species.

Spreading navarretia qualifies as a Group A species as defined in the BMO, which would require 80 to 100 percent preservation of any newly discovered populations on category 3 land. All impacts to vernal pools with the spreading navarretia within the MSCP Study Area will continue to be addressed under Section 404 of the Clean Water Act and will be expected to result in no net loss of wetland value and function for this species. Area specific management directives must include specific measures to protect against detrimental edge effects to the species, and must incorporate measures to conserve and maintain surrounding habitat 1) for pollinators and 2) as part of the hydrological system for the vernal pools.

B. Listed and Proposed Species Not Covered by MSCP

The following listed species may occur, or are known to occur, within the MSCP Planning Area, but are not MSCP Covered Species. The MSCP and the County Subarea Plan do not limit the Service's options to protect habitat for these species. The Service has the same means under law to protect habitat for these species with the MSCP as without, therefore the MSCP and the County Subarea Plan do not have any direct effects on these species.

Quino Checkerspot Butterfly (*Euphydryas editha quino*)

Few focused surveys have been performed for the Endangered Quino Checkerspot butterfly in the MSCP Planning area. Given the baseline status of this animal as described within the Species Account section of this Biological Opinion and the MSCP BO (four known extant populations within the United States) any population found in the MSCP Planning Area may be significant to the recovery of the species. Additional information on specific habitat and life history requirements is needed to determine appropriate management and recovery goals. This species is not a covered species under the MSCP Plan and no incidental take of the species would be authorized under the County's permit. Surveys for this species will continue to occur in suitable habitat under CEQA, NEPA, and the ESA as applicable. Any newly discovered population will continue to receive the protections provided under Section 9 of the Act. Therefore, no direct effects to this species are anticipated by this action. Any impacts that would result in take of the species would require a separate incidental take permit. To obtain a permit, the applicant would have to provide adequate mitigation and demonstrate that the incidental take would not appreciably reduce the likelihood of the survival and recovery of the species. In addition, because the Quino checkerspot is identified as a rare, narrow endemic animal species under the BMO, any impacts to the species would have to be avoided to the maximum extent practicable. Where complete avoidance is infeasible, projects must be designed to avoid any significant reduction in species viability.

Indirect effects to the checkerspot could include loss of unoccupied suitable habitat for the species, fragmentation and edge effects. Recreational activities could lead to trampling or other disturbance, and placement of development to avoid coastal sage scrub or chaparral impacts could increase the potential for disturbance to areas supporting the checkerspot host plants, (dwarf plantain and owl's clover). The large-scale planning provided through MSCP is intended to minimize fragmentation and edge effects through establishment of large blocks of interconnected habitat, which is often not feasible through conservation planning at a smaller scale. The MSCP will conserve occupied habitat for this species on Otay Mountain and in Marron Valley and other potentially suitable habitat in south San Diego County and on Refuge land. The Otay Mountain population occurs within the County's South Segment of their County Subarea plan. However, the level of occurrence throughout the County Subarea Plan is

unknown.

Pacific Little Pocket Mouse (*Perognathus longimembris pacificus*)

The Endangered Pacific little pocket Mouse is not currently known to occur in the MSCP Plan Area. Historical localities are documented within two miles of the coast, and no reported historical localities are present within the County Subarea. However, with only three to four known populations range wide, any newly discovered population of this species within the MSCP planning area would be significant to the survival and recovery of this species. Adequate focused surveys have not been conducted within the County Subarea; therefore, sufficient data on the distribution, life history, and amount of suitable habitat present in the County Subarea are not available. This species is not a covered species under the MSCP Plan and no incidental take of the species would be authorized under the County's permit. Surveys for this species will continue to occur in suitable habitat, as determined based on project level assessments, under CEQA, NEPA, and the ESA as applicable. Any newly discovered populations will continue to receive the protections provided under Section 9 of the Act. Therefore, no direct effects to this species are anticipated by this action. Any impacts that would result in take of the species would require a separate incidental take permit. To obtain a permit, the applicant would have to provide adequate mitigation and demonstrate that the incidental take would not appreciably reduce the likelihood of the survival and recovery of the species. In addition, because the Pacific Pocket Mouse is identified as a rare, narrow endemic animal species, any impacts to the species would have to be avoided to the maximum extent practicable. Where complete avoidance is infeasible, projects must be designed to avoid any significant reduction in species viability

Indirect effects to the pocket mouse could include fragmentation and edge effects to suitable habitat for the species. The large-scale planning provided through MSCP is intended to minimize fragmentation and edge effects through establishment and adaptive management of large interconnected habitat blocks, which is often not feasible through planning on a smaller scale and may result in the protection of potential habitat for this species.

Orcutt's Spineflower (*Chorizanthe orcuttiana*)

The Endangered Orcutt's spineflower is not known to occur within the MSCP Plan Area and is not a covered species under the MSCP or the County Subarea Plan. However, adequate focused surveys have not been performed for this species in the Subarea. Given the baseline status of only two known extant occurences (Point Loma on DOD land and City of Encinitas, located outside the MSCP Plan Area) of the Orcutt's spineflower, as described in the Species Account section of this opinion, any population found in the planning area would be significant to the survival and recovery

of this species.

This species is found on sandstone soil in southern maritime chaparral. The Service conducted an assessment of soils as part of the analysis for plant species coverage for the MSCP Plan. Based on this analysis, approximately 236 acres (10 percent) of the specific sandstone soils believed to be required for this species that formerly existed in the MSCP Plan Area remain. No analysis of this nature was performed specifically for the County Subarea. However, no historical occurrences of this species are documented from the County Subarea and no suitable habitat is believed to occur within the County Subarea. Of the ten percent or remaining suitable sandstone soils, approximately half would be conserved by the MSCP Plan, the majority in fragmented patches. Presently, it is unknown how much of the sandstone soil meets the specific habitat requirements for Orcutt's spineflower. Additional information will be needed to determine appropriate management and recovery goals for this species.

Based on current information there would not be any direct or indirect effects on the species because it is not known to occur in the County Subarea. Surveys for this species will continue to occur in suitable habitat under CEQA, NEPA, and the Act as applicable. Any discovered population will continue to receive the protections provided under the Act. The Orcutt's spineflower is also protected as an endangered species under the California Endangered Species Act (CESA). According to the California Department of Fish and Game, incidental take of the species is prohibited under CESA without an incidental take permit. In addition, Orcutt's spineflower qualifies as a Group A species as defined in the County's BMO, therefore any discovered within the Category 3 lands will be 80 to 100 percent preserved.

Mexican Flannelbush (*Fremontodendron mexicanum*)

The proposed Endangered Mexican flannelbush is not a covered species under the MSCP or the County's subarea plan. Within the MSCP Plan Area the one known population of this species is in the Cedar Creek area of Otay Mountain. Approximately 50 percent of this population is conserved within a Bureau of Land Management Area of Critical Environmental Concern. The remainder of this population is in proposed open space on Otay Ranch (Category 1 land in South County Segment). Sufficient site-specific data regarding other locations of this proposed endangered species are not presently available. Because of the rarity of the species, any new population found within the planning area would be significant to the survival and recovery of this species. Its specific habitat requirements are unknown; additional information will be needed to determine appropriate management and recovery goals. Surveys for this species will continue to occur in suitable habitat under CEQA, and NEPA as applicable. Mexican flannelbush qualifies as a Group A species as defined in the BMO, therefore any newly discovered populations within the Category 3 lands will be 80 to 100 percent preserved. If the species becomes federally listed, surveys will also occur under the

Endangered Species Act, as applicable, and newly discovered populations will receive protections provided under the Act.

The Mexican flannelbush is listed as a rare species by the State of California under the California Endangered Species Act (CESA). According to the California Department of Fish and Game, incidental take of the species is prohibited under CESA without an incidental take permit

Indirect effects to this species could include fragmentation and edge effects to potential habitat resulting from increased development outside the MHPA. However, it is impossible to determine the significance of these potential indirect effects based on current information. The only known locations for Mexican flannelbush within the MSCP Plan Area are conserved within Federal public lands and Category 1 lands. Additionally, no information is available regarding the amount of land, if any, outside the MHPA which meets the specific habitat requirements for this species. The large-scale planning provided through MSCP is intended to minimize fragmentation and edge effects through establishment and adaptive management of large interconnected habitat blocks, which may result in the protection of potential habitat for this species.

C. Covered Species Which are not Federally Listed, Proposed for Listing, or Candidates for Listing

A total of 56 other covered species which are not federally listed, proposed for listing, or candidates for listing under the Act may be affected by the proposed action. A summary of the potential effects of the entire MSCP Plan is presented in Attachment 1 to this document. An analysis of the effects of the entire MSCP Plan on these species and the reasons for including these species under the MSCP Plan are presented in the MSCP Plan, MSCP Biological Opinion, Final EIR/EIS, and the 1995 and 1996 Species Evaluations (USFWS and CDFG 1996). Table 1 of this Biological Opinion indicates the number and percent of known point localities that would be preserved for each species within the County Subarea alone. Because of the proposed level of conservation and management, it is expected that all of these species will benefit from the interconnected preserve and associated management within the plan area.

Table 1. MHPA Conservation Levels Within County Subarea for Additional Covered Species[1]

SPECIES NAME & STATUS	PRESERVATION LEVEL[2]
PLANTS	
Shaw's agave (*Agave shawii*)	No point localities in MSCP database for Subarea. SP
San Diego ambrosia (*Ambrosia pumila*)	2/3 pts. (67 percent conservation). SP: 1.6 to 2 more conserved, therefore total 87 to 100 percent conservation. NE
Aphanisma (*Aphanisma blitioides*)	No point localities or potential habitat in MSCP database for Subarea. SP .
Otay manzanita (*Arctostaphylos otayenis*)	24.7/26 pts. (95 percent). SP: No known occurrences in category 3
Orcutt's brodiaea (*Brodiaea orcuttii*)	29.9/37 pts. (81 percent). SP: 4.8 to 6 more conserved, therefore total 82 to 97 percent conservation. CP: critical population north of San Vicente Reservoir.
Dense reed grass (*Calamogrostis koelerioides*)	4.7/5 pts. (94 percent)
Dunn's mariposa lily (*Calochortus dunnii*)	40/40 (100 percent) SP: No known occurrences on MSCP database in category 3, but may occur on Cat. 3 land on San Miguel Mtn.. NE
Slender-pod jewelflower (*Caulanthus stenocarpus*) No longer considered to be a valid taxon; combined in *C. heterophyllus*]	20.7/22 pts. (94 percent). CP: critical populations at Wildcat Canyon, Poway/Sanrex, Fortuna Mountain, Dehesa (north of Sweetwater River)

[1]See also the impact avoidance and management conditions for each species in Table 3-5 of the MSCP Plan (attachment 2 to this BO).

[2]Level of conservation in this table is expressed in terms of at least one of the following:

A) # of MSCP database occurrences targeted for conservation / # of MSCP database occurrence in total Subarea. (Not factoring in C, below)

B) # of acres of suitable habitat targeted for conservation / # of areas of habitat in total Subarea.

C) anticipated level of conservation considering both c and additional preservation provided to County Group A and B plant species and rare, narrow endemic animal species. The codes signify the type of additional protection afforded; as follows:

1. SP: Sensitive Plants: For projects on category 3 lands, the County BMO requires avoidance of impacts to these species (Group A or Group B plant species) to the maximum extent practicable. Where complete avoidance is infeasible, encroachment may be authorized depending on the sensitivity of the individual species and the size of the population except that encroachment shall not exceed 20 percent of the population on-site. Where impacts are allowed, in-kind preservation shall be required at a 1:1 to 3:1 ratio depending on the sensitivity of the species and population size, as determined in a biological analysis approved by the Director of County Planning.
2. CP: Critical Populations: Impact avoidance is required for specific critical populations identified in the Subarea Plan.
3. NE: Rare and/or Narrow Endemic Animal Species: On category 3 lands impact avoidance to the maximum extent practicable is required for these animal species.

Lakeside ceanothus (*Ceanothus cyaneus)*	5.2/8 pts. (65 percent) SP: 1.2 to 2.8 more conserved, therefore total conservation level of 80 to 100 percent (all on cat. 3 land) . NE
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	20.4/50 pts. (41 percent) SP: 6.4 to 8 more conserved, therefore total conservation level of 51 to 54 percent
Orcutt's bird's-beak (*Cordylanthus orcuttianus*)	2/2 pts. (100 percent) SP: no known occurrences on category 3 land.
Del Mar sandaster (*Lessingia filaginifolia* [= *Corethrogyne filaginifolia* var. *linifolia*])	0/11 (0 percent) SP: 8.8 to 11 conserved, therefore total conservation level of 80 to 100 percent (all on cat. 3 land)
Tecate cypress (*Cupressus forbesii*)	22.1/23 pts. (96 percent) SP: no known occurrences on cat. 3 land on MSCP database but may occur on cat. 3 land on Otay Mtn. and Dulzura..
Short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia*)	No known point localities in MSCP database for Subarea. NE SP
Variegated dudleya (*Dudleya variegata*)	123.8/135 pts. (94 percent) SP: .8 to 1 more conserved, negligible change. NE
Sticky dudleya (*Dudleya viscida*)	2/3 pts. (67 percent) SP: no known occurrences on cat. 3 land.
Palmer's ericameria (*Ericameria palmeri*)	14.9/17 pts. (88 percent) SP: 6.5 to 8 other occurrences, therefore total conservation of 88 to 96 percent. NE
Coast wallflower (*Erysimum ammophilum*)	This species does not occur south of Monterey County; populations in San Diego County misidentified.
San Diego barrel cactus (*Ferocactus viridescens*)	498.1/660 pts. (76 percent) SP: 15.2 to 19 more conserved, therefore total conservation of 76 to 78 percent.
Heart-leaved pitcher sage (*Lepechinia cardiophylla*)	0/3 pts. (0 percent). SP: 2.4 to 3 conserved (80 to 100 percent preservation). NE
Gander's pitcher sage (*Lepechinia ganderi*)	25/25 pts. (100 percent) SP. NE
Nuttall's lotus (*Lotus nuttallianus*)	No point localities in MSCP database for Subarea. SP
Felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*)	5/6 pts. (83 percent) SP: 0 to 1 more conserved, therefore total conservation of 83 to 100 percent CP: critical populations at Sequan Peak, Iron Mountain
San Diego golden star (*Muilla clevelandii*)	88.1/109 pts. (81 percent) SP: 6.4 to 8 more conserved, therefore total conservation of 84 to 85 percent
Snake cholla (*Opuntia parryi* var. serpentina)	9/14 pts. (64 percent) SP: no known occurrences on cat. 3 land.
Torrey pine (*Pinus torreyana* ssp. *torreyana*)	No natural occurrences in the Subarea. SP
Small-leaved rose (*Rosa minutifolia*)	No point localities in MSCP database for Subarea. SP
San Miguel savory (*Satureja chandleri*)	1.7/3 pts. (57 percent) for Subarea SP
Gander's butterweed (*Senecio ganderi*)	4/4 (100 percent) SP. CP: Critical population at El Cajon Mountain (between El Capitan and San Vicente Reservoir)
Narrow-leaved nightshade (*Solanum tenuilobatum*) [Not a valid taxon; combined with *S. xanti*]	99.7/136 (73 percent). CP: Critical populations at Silverwood and Fernbrook (near Mussey Grade Road)

Parry's tetracoccus (*Tetracoccus dioicus*)	30/30 pts. (100 percent): SP. Conservation goal to protect all of the 24 occurrences known from category 3 land. CP: Critical population at Dehesa
SPECIES NAME & STATUS	**CONSERVATION LEVEL**
ANIMALS	
Thorne's hairstreak butterfly (*Mitoura thornei*)	5,589/5,710 (98 percent) acres of Tecate cypress forest (larval host plant). NE
Salt marsh skipper (*Panoquina errans*)	No point localities in database for Subarea. NE
Southwestern pond turtle (*Clemmys marmorata pallida*)	2/4 pts. (50 percent) 3,560/6,427 (55 percent) acres of riparian habitats and freshwater marsh. Remainder of habitat subject to no net loss of function and value. NE
San Diego horned lizard (*Phrynosoma coronatum blainvillii*)	114.2/195 pts. (69 percent) 85,625/154,553 acres (55 percent) of potential habitat (scrub habitats and chaparral)
Orange-throated whiptail (*Cnemidophorus hyperythrus beldingii*)	165.6/330 pts. (50 percent) 85,625/154,553 acres (55 percent) of potential habitat (scrub habitat and chaparral)
Cooper's hawk (*Accipiter cooperii*)	29.5/49 pts (60 percent) 90,025/163,895 acres (55 percent) potential foraging habitat (oak woodland, oak riparian, scrub and chaparral. 4,400/9,342 acres (47 percent) known nesting habitat (oak riparian and oak woodland)
Tricolored blackbird (*Agelaius tricolor*)	2/8 pts. (25 percent) 998/1,532 acres (65 percent) of breeding habitat (freshwater marsh, riparian scrub). Remainder of breeding habitat subject to no net loss of function and value.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	175.6/260 pts. (67 percent) 45,736/74,730 acres (61 percent) of potential habitat (scrub)
Golden eagle (*Aquila chrysaetos*)	21/37 pts. (57 percent) RE: avoidance requirements on cat. 3 land could lead to conservation levels of 70 to 84 percent 91,397/170,416 acres (54 percent) of potential foraging/nesting habitat (scrub, chap, grassland, and oak woodland..see MSCP Plan Tbl 3-5 for more). NE
Canada goose (*Branta canadensis*)	387/625 acres (62%)of potential foraging habitat (freshwater marsh and open water). See MSCP Table 3-5.
Ferruginous hawk (*Buteo regalis*)	0.7/1 pts. (70 percent) 3,566/26,255 acres (14 percent) of foraging habitat (grasslands and ag. fields)
Swainson's hawk (*Buteo swainsoni*)	1/1 pts. (100 percent) 3,566/26,255 acres (14 percent) of foraging habitat (grasslands and ag. fields

Cactus wren (*Campylorhynchus brunneicapillus*)	194/269 pts. (72 percent) 158/285 acres (55 percent) of maritime succulent scrub 4 of 5 major populations conserved in MSCP Plan, County Subarea contributes to that conservation at Lake Hodges/San Pasqual, Lake Jennings, South Sweetwater/San Miguel and Salt Creek/Otay Mesa. See Table 3-5. NE
Northern harrier (*Circus cyaneus*)	12.8/27 pts. (47 percent) 3,804/11,207 acres (34 percent) of potential nesting habitat (freshwater marsh and grasslands) and 3,566/10,864 acres (33 percent) of potential foraging habitat (grasslands)
Reddish egret (*Egretta rufescens*)	0/1 (0 percent) No coastal saltmarsh or saltpan in the Subarea, but 344/391 acres (88 percent) of natural flood channel preservation. Remainder of habitat subject to no net loss of function and value.
Long-billed curlew (*Numenius americanus*)	No point localities in MSCP database for Subarea, but known to forage on Otay Mesa (pers. com. Ellen Berryman). No coastal saltmarsh or saltpan in the Subarea, but 3,566/26,255 acres (14 percent) of foraging habitat (grasslands and ag. fields) would be preserved.
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	No populations or habitat (coastal saltmarsh) in Subarea. NE
Large-billed savannah sparrow (*Passerculus sandwichensis rostratus*)	No point localities in MSCP database for Subarea. No coastal saltmarsh in MSCP database for the Subarea.
White-faced ibis (*Plegadis chihi*)	No point localities in MSCP database for Subarea. 344/391 acres (88 percent) of natural flood channel preservation and 238/343 (69 percent) of freshwater marsh. Remainder of wetland habitat subject to no net loss of function and value. Approximately 11 percent of agriculture, excluding orchards, preserved.
Western bluebird (*Sialia mexicana*)	1.77/11 pts. (15 percent) 6,120/16,389 acres (37 percent) of potential habitat (riparian forest, oak woodland, grassland)
Western burrowing owl (*Athene cunicularia hypogea*)	7/16 pts. (44 percent) 3,566/10,864 acres (33 percent) of grasslands. See MSCP Plan Table 3-5. NE
Elegant tern (*Sterna elegans*)	No point localities in MSCP database for Subarea. No known potential habitat (saltpan, beach) in Subarea.
Mountain lion (*Felis concolor*)	9.1/17 pts. (54 percent) Preserve design (See MSCP Plan Table 3-5)
Southern mule deer (*Odocoileus hemionus fuligina*)	54/81 pts. (67 percent) Preserve design (See MSCP Plan Table 3-5)
American badger (*Taxidea taxus*)	49,302/85,594 acres (58 percent) of potential habitat (grassland, scrub)

V. CUMULATIVE EFFECTS

The Service must consider both the effects of the proposed action and the cumulative effects of other activities in determining whether the action is likely to jeopardize the continued existence of

a covered species or result in the destruction or adverse modification of critical habitat. Cumulative effects are defined as the effects of future state, local government, or private actions that are reasonably certain to occur in the action area considered in this Biological and Conference Opinion. Future federal actions are not considered cumulative to the proposed action because they require separate consultation pursuant to Section 7 of the Act.

Cumulative effects of the entire MSCP Plan of which the County's subarea plan is a component part, are addressed in the MSCP BO (Attachment 1). All future local government, or private actions that are expected to occur within the MSCP planning area and within the County Subarea Plan would be covered under the MSCP Plan, and are therefore considered as effects of the proposed action rather than cumulative effects. Future projects which would impact wetlands would require permits from the Army Corps of Engineers pursuant to Section 404 of the Clean Water Act, therefore these would constitute federal actions that would not be considered as contributing to cumulative effects. Future projects on military lands or other Federal lands (e.g. Bureau of Land Management, and Forest Service lands) would constitue federal actions and would therefore not be considered as contributing to cumulative effects. State actions are generally not subject to local jurisdictional or Federal authorization. If Federal permits, licenses, dollars, lands or agency authorizations are involved then the State action would be subject to Section 7 if any Federally listed Threatened or Endangered species were affected. For example, California Department of Transportation (CalTrans) is not an applicant under the MSCP Plan, many CalTrans projects typically involve federal funding and would therefore be considered federal actions.

Cumulative effects could result from State actions with no Federal involvement, Special Districts (such as water and school districts) activities, utilities (such as San Diego County Water Authority (SDCWA) and San Diego Gas and Electric[SDG&E]), and small projects that require ministerial approval or no authorization from the local jurisdiction. Listed wildlife species will continue to be protected under section 9 of the ESA; however, unoccupied habitat and habitat occupied by listed plants and nonlisted covered species could be adversely affected due to direct loss, habitat fragmentation, and edge effects. State actions are expected to be subject to CEQA and must be assessed with regard to impacts to the MSCP, as will as State agency obligations under the California Endangered Species Act. The Service is presently working with five water districts within the MSCP Planning Area and the SDCWA to prepare County Subarea plans for their actions. The Service has issued a permit for the SDG&E Subarea Plan. Small projects that do not require County authorization within the County Subarea are expected to be limited in scope and number, and therefore have minimal impacts on the County Subarea Plan and the covered species.

VI. CONCLUSION

Based on the preceding analysis of direct, indirect and cumulative impacts, the following summarizes the Service's Biological and Conference Opinion regarding effects of the proposed issuance of a Section 10(a)(1)(B) permit to the County of San Diego, pursuant to the MSCP.

MAR 12 1998

A. Covered Species which are Listed or are Proposed or Candidates for Listing

1. Coastal Sage Scrub, Maritime Succulent Scrub, and Southern Coastal Bluff Scrub

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of the California gnatcatcher because: (1) the plan will result in preservation of 45,737 acres of gnatcatcher habitat; (2) the plan will result in preservation of areas which include 65 percent of the MSCP point localities for this species; (3) preservation will focus on high quality habitat supporting core populations of gnatcatchers in large interconnected blocks; (4) the preserve will provide connectivity to gnatcatcher habitat outside the planning area; (5) conditions for coverage under the County Subarea Plan require implementation of area specific management directives to reduce edge effects, minimize disturbance during the gnatcatcher nesting season, develop fire protection measures, and implement management measures to maintain or improve habitat quality. Large, interconnected blocks of sage scrub habitat within the planning area that is expected to be necessary for the long-term survival and recovery of the gnatcatcher and other sage scrub dependent species will be preserved under the proposed plan and adaptively managed in perpetuity.

Significant benefits can be achieved for the California gnatcatcher and other sage scrub species through large scale planning rather than a piecemeal project-by-project approach including: (1) regional preserve systems that encompass the full range of habitat types and species (rather than a single species or habitat) are more likely to maintain functional ecosystems; (2) sub-regional preserve systems that are coordinated with adjacent public lands and other conservation planning efforts are less likely to result in isolation and fragmentation of habitat patches; (3) provides for connectivity of occupied habitat through non-occupied or non-sage scrub habitats; (4) consolidates large preserve areas; (5) suitable but unoccupied sage scrub habitat or successional sage scrub in the preserve system that is presently not occupied but may be in the future; (6) proactively plans for the conservation of unlisted species to avoid significant declines in populations; and (7) eliminates the use of haphazard, isolated and ultimately non-functional mitigation sites.

2. Chaparral including Southern Maritime Chaparral, Southern Mafic Chaparral, Chamise Chaparral, Tecate Cypress Forest, and Southern Mixed Chaparral

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of Del Mar manzanita because: (1) over 60 percent of the MSCP mapped occurrences within the County Subarea will be conserved; (2) any populations of this species found on category 3 lands will be 80 percent to 100 percent preserved; and (2) edge effects to this species in the County will be minimized through specific management measures to promote germination of seeds, maintenance of diverse age class structure and reduction in the risk of catastrophic fire.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of Encinitas baccharis because: (1) The one major population within the planning area will be approximately 76 percent preserved; (2) additional conservation will be provided through 80 to 100 percent conservation of any populations of this species found on category 3 lands, including six MSCP documented occurrences, one population that is not documented in the MSCP database, and any newly discovered populations on category 3 land; and (3) indirect effects will be minimized through specific management measures to consider male/female ratios and maintain a natural fire regime, and site-specific monitoring of at least one population.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of Nevin's barberry because: (1) this species is primarily dependent on efforts outside the planning area; (2) no natural populations are known to occur within the planning area; and (3) any populations of this species found on category 3 lands will be 80 percent to 100 percent preserved.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of Dehesa beargrass because: (1) 97 percent of the point localities for the three major populations of this species that occur within the County Subarea will be preserved; (2) any populations of this species found on category 3 lands will be 80 percent to 100 percent preserved; and; (3) specific measures will be implemented to protect against detrimental edge effects and maintain surrounding habitat for pollinators.

3. Grasslands and Other Clay Soils Associated Species

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of the mountain plover because: (1) the species does not breed in the County Subarea and the MSCP Planning Area, and may no longer occur within San Diego County (pers. com. McCaskie 1998); (2) at least 7,298 acres of potential winter foraging habitat will be conserved; and (3) the potential winter foraging habitat that would be lost or degraded within the planning area represents an insignificant portion of the species' range. The species' long-term survival is not dependent upon preservation within the MSCP planning area.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of San Diego thornmint because: (1) the preserve will include at least 60 percent of the 25 documented MSCP occurrences of this species within the County Subarea; (2) additionally, 3.9 other MSCP documented occurrences in the Metro-Lakeside-Jamul segment as well as any newly discovered populations on category 3 land will be 80 to 100 percent preserved; and (3) specific measures will be implemented to protect against detrimental edge effects that may result from development of Otay Lakes Resort.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of thread-leaved brodiaea because: (1) no major populations of this species

are known to occur within the MSCP planning area; and (2) any populations of this species found on category 3 lands will be 80 percent to 100 percent preserved.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of Otay tarplant because: (1) 60 percent of the MSCP documented occurrences will be conserved; (2) any populations of this species found on category 3 lands will be 80 percent to 100 percent preserved; (3) active recreational development in the Otay River Valley must avoid impacts to this species; and (4) area specific management directives will include specific measures to protect against detrimental edge effects to this species throughout the County Subarea preserve.

4. Wetlands

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of the bald eagle, California brown pelican, American peregrine falcon, western snowy plover, California least tern, light-footed clapper rail, southwestern willow flycatcher, least Bell's vireo, San Diego fairy shrimp, or Riverside fairy shrimp, because no direct adverse effects to these species are anticipated under the plan. Any effects to these species associated with impacts to jurisdictional wetlands must be authorized through a Section 7 consultation on the issuance of permits pursuant to Section 404 of the Clean Water Act. The proposed plan is consistent with recovery plans for the bald eagle, California brown pelican, American peregrine falcon, California least tern, and light-footed clapper rail. The County Subarea Plan will not have an adverse effect on lands designated as critical habitat for the least Bell's vireo and the southwestern willow flycatcher. No critical habitat for the peregrine falcon, or proposed critical habitat for the snowy plover, is present within the County Subarea so none would be affected by the proposed action.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of the arroyo toad because: (1) as stated in the MSCP Biological Opinion, all known breeding localities of this species within the MSCP planning area would be preserved; (2) state, federal, and local regulations will provide habitat protection resulting in no net loss of wetland function and value throughout the County Subarea for the wetland habitat that potentially supports this species; (3) take authorization holders must minimize impacts to upland habitat which is within one km of riparian habitat supporting arroyo toads; (4) the County BMO requires avoidance of impacts to this species to the maximum extant practicable, and where complete avoidance is infeasible, projects will be designed to avoid any significant reduction in species viability; and (5) area-specific management directives will address maintenance and management of arroyo toad habitat.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of salt marsh bird's beak, San Diego button celery, San Diego mesa mint, Otay mesa mint, California Orcutt grass, and spreading navarretia because: (1) these plants are restricted to wetland habitats and the plan will provide for avoidance of impacts to wetlands to the

maximum extent practicable; (2) state, federal, and local regulations will provide habitat protection resulting in no net loss of wetland function and value for these species; (3) no salt marsh bird's beak or San Diego mesa mint are known to occur in the County Subarea; (4) impact avoidance and additional measures will be provided for Otay Mesa mint, California Orcutt grass and spreading navarretia as required under the County Subarea Plan and BMO for narrow endemic and Group A species on category 3 land; and (5) the following additional species-specific measures will be implemented.

a) For San Diego button celery, specific measures will be implemented to protect against detrimental edge effects.

b) For Otay Mesa mint, California Orcutt grass, and spreading navarretia, preserve management will include measures to protect against detrimental edge effects, maintain surrounding habitat for pollinators, and maintain watershed areas.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of coastal dunes milk vetch because (1) this species is not known to occur in the County Subarea; (2) no potential habitat for this species is known to occur in the County Subarea; and (3) the survival of this species is largely dependent on preservation efforts outside the MSCP planning area.

B. Listed Noncovered Species

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of the Quino checkerspot, Pacific pocket mouse, Orcutt's spineflower, and the Mexican flannel bush based on the following information:

The effects of the County Subarea Plan on the Quino checkerspot butterfly would not be likely to result in jeopardy to this species based on: (1) the conservation and management provided by the MSCP Plan and the County Subarea Plan of lands with known populations and suitable habitat for this species; (2) requirements under the California Environmental Quality Act for surveys within identified suitable habitat; (3) inclusion of this species on the list of narrow endemics will provide protection for newly discovered occurrences within Category 3 lands; (4) no take is authorized under the MSCP Plan or County Subarea Plan; and (5) existing protection is provided by the Endangered Species Act

The effects of the County Subarea Plan on the Pacific pocket mouse would not be likely to result in jeopardy to this species based on: (1) no known or historical localities for this species occur within the County Subarea Plan: (2) the known range of this species is within two miles of the coast, and the County Subarea is likely too far inland to provide suitable habitat for this species; (3) under the California Environmental Quality Act, project proponents will likely be required to survey within identified suitable habitat; (4) inclusion of this species on the list of narrow endemics will provide protection consistent

with the BMO for newly discovered occurrences within Category 3 lands; (5) no take is authorized under the MSCP Plan or County Subarea Plan; and (6) existing protection is provided by the Endangered Species Act.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of Orcutt's spineflower because: (1) no known populations of this species occur within the County Subarea; (2) this species is a state listed species and is not covered under the plan and any newly discovered populations of this species within the planning area would receive protection under the California Endangered Species Act; (3) any discovered populations that would be impacted by any federal actions would receive protection under the federal Endangered Species Act; and (4) any discovered populations within the Category 3 lands would be 80 to 100 percent protected as required under the BMO for Group A species.

The Service finds that the proposed action will not appreciably reduce the likelihood of the survival and recovery of Mexican flannel bush because: (1) the one known location of this species within the County Subarea will be preserved; (2) this species is a state listed species and is not covered under the plan, and any newly discovered populations of this species within the planning area would receive protection under the California Endangered Species Act; and (4) any discovered populations within Category 3 land would be 80 to 100 percent protected as required under the BMO for Group A species.

C. Unlisted Covered Species

It is the Service's opinion that including in the County's incidental take permit the 57 species covered under the MSCP which are not currently listed, proposed for listing, or candidates for listing is not likely to jeopardize the continued existence of these species should they be listed in the future because:

(1) most or all of the ranges of Shaw's agave, short-leaved dudleya, small-leaved rose, aphanisma, coast wallflower, Torrey pine, salt marsh skipper, southwestern pond turtle, white-faced ibis, Canada goose, northern harrier, Swainson's hawk, ferruginous hawk, golden eagle, long-billed curlew, elegant tern, Belding's savannah sparrow, large-billed savannah sparrow, western bluebird, American badger, southern mule deer, and mountain lion occur outside the County Subarea; therefore, the effects to these species which are expected to result from the County Subarea Plan are not significant to the species' long-term survival. Furthermore, any potential habitat for the wetland species which may occur in the County Subarea (southwestern pond turtle, white-faced ibis, Canada goose) will be conserved through the state, federal, and local wetland policies of no net loss of habitat function and value.

(2) Wetland habitat for reddish egret and tri-colored blackbird will be conserved through the state, federal, and local wetland policies of no net loss of habitat function and value.

(3) Impacts to major populations of the following species are expected to be minimal: San Diego ambrosia (87 to 100 percent of County Subarea occurrences conserved); Otay manzanita (95 percent of County Subarea occurrences conserved), Orcutt's brodiaea (82 to 97 percent of County Subarea occurrences conserved), dense reed grass (94 percent of County Subarea occurrences conserved), Dunn's mariposa lily (100 percent of County Subarea occurrences conserved), Tecate cypress (98 percent of Tecate cypress forest conserved), sticky dudleya (67 percent of County Subarea occurrences conserved), Gander's pitcher sage (100 percent of County Subarea occurrences conserved), Gander's butterweed (100 percent of County Subarea occurrences conserved), narrow-leaved nightshade (73 percent of County Subarea occurrences conserved). Additional impact avoidance and other measures will be provided for any newly discovered populations of Shaw's agave, San Diego ambrosia, aphanisma, short-leaved dudleya, and variegated dudleya on category 3 land, as required under the County BMO. To maintain long-term survival in the planning area, area specific management directives will be required for Shaw's agave, San Diego ambrosia, Otay manzanita, dense reed grass, Tecate cypress, short-leaved dudleya, sticky dudleya, Gander's pitcher sage, and Gander's butterweed.

(4) Impacts to the following species will be offset through measures provided under the plan, including permanent preservation of large, interconnected blocks of multiple habitat types and management of the preserved land for long-term species viability: slender-pod jewelflower, Lakeside ceanothus, wart-stemmed ceanothus, Orcutt's bird's-beak, Del Mar sand aster, variegated dudleya, Palmer's ericameria, San Diego barrel cactus, heart-leaved pitcher sage, Nuttall's lotus, snake cholla, Parry's tetracoccus, felt-leaved monardella, San Diego goldenstar, San Miguel savory, San Diego horned lizard, orange-throated whiptail, Cooper's hawk, western burrowing owl, coastal cactus wren, and California rufous-crowned sparrow. Snake cholla, variegated dudleya, and Palmer's ericameria will receive protection afforded to narrow endemic species under the MSCP Plan, and area specific directives are expected to address management for all these species except Palmer's ericameria.

D. Recovery

The County Subarea Plan is consistent with the MSCP Plan, which was developed to meet the NCCP goals of providing for high likelihood of persistence of target species and providing for no net loss of habitat value from the present. The NCCP Conservation Guidelines define no net loss of habitat value as "... no net reduction in the ability of the subregion to maintain viable populations of target species over the long-term." (The MSCP planning area is a subregion under NCCP.) The guidelines clarify that "the goal of no net loss of habitat value may be attainable even if there is a net loss of habitat acreage, provided that the preserve design is adequate and techniques are employed to manage and restore the preserved habitat." The County Subarea preserve design is consistent with the seven basic tenets of preserve design outlined in the Conservation Guidelines, and preserve management will be provided through species-specific and site-specific land-use and management guidelines to ensure that the preserve's biological values

are maintained in perpetuity. The permanent protection and management provided under the plan will allow for the recovery of covered species by: a) supporting the persistence of narrowly ranging covered plant and wildlife species within the planning area whose survival is dependent upon persistence in this area; b) contributing to the long-term habitat viability of vegetation communities for species dependent on these communities; and c) contributing to the overall conservation of wide-ranging species through the protection of large, interconnected blocks of habitat rather than the small patches that will result from project-by-project mitigation.

VII. INCIDENTAL TAKE

Section 9 of the Act and Federal regulations pursuant to Section 4(d) of the Act prohibit the take of endangered and threatened species of fish and wildlife species without special exemption. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct". Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2) of the Act, taking that is incidental to and not intended as part of the proposed action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this incidental take statement.

The proposed County Subarea Plan and its associated documents clearly identify anticipated impacts to affected species likely to result from the proposed taking and the measures that are necessary and appropriate to minimize those impacts. All conservation measures described in the proposed County Subarea Plan, together with the terms and conditions described in the associated IA and any Section 10(a)(1)(B) permit or permits issued with respect to the proposed MSCP and County Subarea Plan, are hereby incorporated by reference as reasonable and prudent measures and terms and conditions within this Incidental Take Statement pursuant to 50 CFR 402.14(I). Such terms and conditions are non-discretionary and must be undertaken for the exemptions under Section 10(a)(1)(B) and Section 7(o)(2) of the Act to apply. If the permittee fails to adhere to these terms and conditions, the protective coverage of the Section 10(a)(1)(B) permit and Section 7(o)(2) may lapse.

The Section 10(a) permit will also constitute a Special Purpose Permit under 50 CFR 21.27 for the take of those Covered Species Subject to Incidental Take which are listed as threatened or endangered under the Endangered Species Act of 1973, as amended, and which also are protected by the Migratory Bird Treaty Act,.

Based on the proposed County Subarea Plan, and on the analysis of the effects of the proposed action provided above, the Service anticipates that the following take may occur as a result of the

proposed action:

Coastal California Gnatcatcher

The Service anticipates that up to 28,993 acres of scrub habitat may be developed as a result of actions proposed in the County of San Diego's Subarea Plan, although no clearing of occupied habitat within the County's MHPA may occur between March 1 and August 15 as stated in Table 3-5 of the MSCP Plan. The Service anticipates all coastal California gnatcatchers associated with the loss of 28,993 acres of habitat may be killed, harmed, or harassed as a result of the proposed project. As analyzed above, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the species.

Mountain plover

The Service anticipates that 15,587 acres of agricultural lands (excluding orchards) and 7,298 acres of grasslands that potentially support wintering populations of mountain plovers may be developed as a result of actions proposed in the County Subarea Plan. The Service anticipates that zero (0) mountain plovers associated with this habitat will be killed, harmed, or harassed based on the documented use areas of this species, and information that indicates that the Mountain plover is likely extirpated from San Diego County. As analyzed above, the Service has determined that this potential conversion of agricultural lands is not likely to result in jeopardy to the species.

Arroyo Southwestern toad

The Service anticipates zero (0) take due to mortality or habitat loss within the U.S. Army Corps of Engineer's jurisdictional wetlands. An unquantifiable number of southwestern arroyo toads may be killed or harmed as a result of actions proposed in the County Subarea Plan outside of jurisdictional wetlands within 1 km of occupied habitat. However, the County Subarea Plan will require minimization of impacts to upland habitats within the MHPA that are within 1 km of riparian habitat which supports or is likely to support arroyo toads. Additionally, the County Subarea Plan will conserve and manage 20 acres of riparian woodland, 348 acres of riparian forest, 760 acres of riparian scrub, and 238 acres of freshwater marsh habitat within the biological resource core areas of the County. The remaining acreage of this habitat will be regulated under County of San Diego, State, and federal policy of no net loss of function and values. Impacts to wetlands will be avoided to the maximum extent possible throughout the County Subarea. Unavoidable impacts associated with reasonable use or essential public facilities will be minimized and mitigated to achieve no net loss of function and value. Impacts to upland habitats within 1 km of riparian habitat that supports or is likely to support arroyo toads must be minimized. Any future incidental take associated with impacts to jurisdictional wetlands will need to be authorized through a Section 7 consultation on the issuance of permits pursuant to Section 404 of the Clean Water Act. As analyzed above, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the species.

Southwestern willow flycatcher

The Service anticipates that zero (0) take of the southwestern willow flycatcher will occur due to mortality or habitat loss within the U.S. Army Corps of Engineer's jurisdictional wetlands as a result of actions proposed in the County Subarea Plan. The County Subarea Plan will conserve and manage 20 acres of riparian woodland, 348 acres of riparian forest, and 760 acres of riparian scrub habitat within the preserve planning area which encompasses the biological resource core areas of the County Subarea. The remaining acreage of this habitat outside the preserve planning area will be regulated under County, State, and federal policy of no net loss of function and values. Unavoidable impacts associated with reasonable use or essential public facilities will be minimized and mitigated to achieve no net loss of habitat function and value. Any clearing of occupied habitat must occur between September 1 and May 1 (i.e., outside of the nesting period). The County will implement measures to avoid and minimize edge effects of future development adjacent to the preserve; therefore, the Service anticipates minimal harassment of southwestern willow flycatchers as a result of proposed activities. Any future incidental take associated with impacts to jurisdictional wetlands will need to be authorized through a Section 7 consultation on the issuance of permits pursuant to Section 404 of the Clean Water Act. As analyzed above, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the species or adverse modification of critical habitat.

Least Bell's vireo

The Service anticipates that zero (0) take of the least Bell's vireos will occur due to mortality or habitat loss within the U.S. Army Corps of Engineer's jurisdictional wetlands as a result of actions proposed in the County's Subarea Plan. Minimal harm through habitat loss may occur in unusual occurrences where least Bell's vireos occur outside of Corps jurisdictional wetland. The County Subarea Plan will conserve and manage 20 acres of riparian woodland, 348 acres of riparian forest, and 760 acres of riparian scrub habitat within the preserve planning area, which encompasses the core biological resources in the County Subarea. The remaining acreage of this habitat outside the preserve planning area will be regulated under County, State, and federal policy of no net loss of function and values. Unavoidable impacts associated with reasonable use or essential public facilities will be minimized and mitigated to achieve no net loss of habitat function and value. Any clearing of occupied habitat must occur between September 15 and March 15 (i.e., outside of the nesting period). The County will implement measures to avoid and minimize edge effects of future development adjacent to the preserve; therefore, the Service anticipates minimal harassment of least Bell's vireo as a result of proposed activities. Any future incidental take associated with jurisdictional wetlands will need to be authorized through a Section 7 consultation on the issuance of permits pursuant to Section 404 of the Clean Water Act. As analyzed above, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the species or adverse modification of critical habitat.

Bald eagle

The Service anticipates that zero (0) bald eagles will be killed, harmed or harassed as a result of actions proposed in the County Subarea Plan. Take of active nests is not anticipated since no nesting activity is presently known to occur within the County Subarea Plan. The County Subarea Plan will conserve and manage 149 acres (62 percent) of open water and 238 acres (69 percent) freshwater marsh habitats within the preserve planning area, which includes the biological resource core areas in the County Subarea. The remaining acreage of this habitat outside the preserve planning area will be regulated under County, State, and federal policy of no net loss of function and values, and any future take associated with impact to these habitats will need to be quantified and authorized through Section 7 consultations in conjunction with the 404 permitting process. As analyzed above, the Service has determined that no take of this species is authorized under the plan and therefore the plan is not likely to result in jeopardy to the species.

Red-legged frog

The Service anticipates zero (0) red-legged frogs will be killed, harmed or harassed as a result of actions proposed in the County Subarea Plan. The County Subarea Plan will conserve and manage 20 acres of riparian woodland, 348 acres of riparian forest, 760 acres of riparian scrub, and 238 acres of freshwater marsh habitat within the preserve planning area, which encompasses the core biological resources in the County Subarea. The remaining acreage of this habitat outside the preserve planning area will be regulated under County, State, and federal policy of no net loss of function and values. Impacts to wetlands will be avoided throughout the County Subarea. Unavoidable impacts associated with reasonable use or essential public facilities will be minimized and mitigated to achieve no net loss of function and value. Any future incidental take associated with impacts to jurisdictional wetlands will need to be authorized through a Section 7 consultation on the issuance of permits pursuant to Section 404 of the Clean Water Act. As analyzed above, the Service has determined that implementation of the County Subarea Plan is not likely to result in jeopardy to the species.

American Peregrine Falcon

The Service anticipates zero (0) peregrine falcons will be killed, harmed, or harassed as a result of actions proposed in the County Subarea Plan. Although no coastal saltmarsh or saltpan habitat is present in the County Subarea, approximately 48,550 of the 83,206 acres (58 percent) of other types of suitable foraging habitat for the Peregrine falcon (freshwater marsh, open water, natural flood channel, coastal sage scrub, grassland) within the County Subarea will be conserved and managed within the preserve planning area. The remaining acreage of this habitat outside the preserve planning area will be regulated under County, State, and federal policy of no net loss of function and values. Any future incidental take associated with impacts to jurisdictional wetlands will need to be authorized through a Section 7 consultation on the issuance of permits pursuant to Section 404 of the Clean Water Act. As analyzed above, the Service has determined that no take of this species is authorized by the plan, therefore implementation of the plan is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

California Brown Pelican

The Service anticipates zero (0) California brown pelicans will be killed, harmed, or harassed as a result of actions proposed in the County Subarea Plan. The County Subarea Plan includes no southern coastal salt marsh, or other potential habitat, and this species has not been found within the County

Light-footed Clapper Rail

The Service anticipates that zero (0) light-footed clapper rails will be killed, harmed, or harassed as a result of actions proposed in the County Subarea Plan. This species has not been found within the County Subarea, and no potential habitat is present.

California Least Tern

The Service anticipates that zero (0) California least tern will be killed, harmed, or harassed as a result of actions proposed in the County Subarea Plan. This species has not been found within the County Subarea, and no potential habitat is present.

Western Snowy Plover

The Service anticipates that zero (0) Western snowy plover will be killed, harmed, or harassed as a result of actions proposed in the County Subarea Plan. This species has not been found within the County Subarea, and no potential habitat is present.

Riverside fairy shrimp

The Service anticipates zero (0) Riverside fairy shrimp will be killed, harmed or harassed as a result of actions proposed in the County Subarea Plan. The County Subarea Plan requires avoidance to the maximum extent practicable of all vernal pools throughout the County Subarea. Unavoidable impacts associated with reasonable use or essential public facilities will be minimized and mitigated to achieve no net loss of function and value. Any future incidental take associated with impacts to jurisdictional wetlands will need to be authorized through a Section 7 consultation on the issuance of permits pursuant to Section 404 of the Clean Water Act. As analyzed above, the Service has determined that the proposed action is not likely to result in jeopardy to the species.

San Diego fairy shrimp

The Service anticipates zero (0) San Diego fairy shrimp will be killed, harmed, or harassed as a result of actions proposed in the County Subarea Plan. The County BMO requires avoidance of vernal pools to the maximum extent practicable. Unavoidable impacts associated with reasonable use or essential public facilities will be minimized and mitigated to achieve no net loss of function

and value. The BMO requires avoidance of a sufficient amount of watershed necessary for the continuing viability of vernal pools. Any future incidental take associated with impacts to jurisdictional wetlands will need to be authorized through a Section 7 consultation on the issuance of permits pursuant to Section 404 of the Clean Water Act. As analyzed above, the Service has determined that the proposed action is not likely to result in jeopardy to the species.

Other Covered Species

This incidental take statement takes effect upon the future listing of any covered species addressed in this document for which take will otherwise be prohibited under Section 9. The Service anticipates that levels of incidental take of other covered species described in Table 1 of this Biological Opinion and Table 1-3 of the County Subarea Plan may occur as the result of permit issuance. Such take is expected to be in the form of killing, harm, or harassment. However, as analyzed above, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the species.

The ESA does not prohibit the take of listed plant species; consequently, Section 7(b)(4) and 7(o)(2) of the Act do not apply to the listed plants. However, the Act prohibits the removal or reduction to possession of endangered or threatened plants from areas under Federal jurisdiction, or any act that will remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any state or in the course of any violation of a state criminal trespass law.

VIII. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service recommends that the following conservation measures be implemented:

1. The Service should provide technical assistance to the applicants throughout the term of the permit.

2. The Service should provide technical advice on monitoring and other biological issues associated with implementation of the County Subarea plans.

IX. REINITIATION NOTICE

This concludes formal consultation and conference on the proposed issuance of an incidental take permit to the County of San Diego. As provided in 50 CFR 402.16, reinitiation of formal

consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Biological and Conference Opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Biological and Conference Opinion; or (4) a new species not addressed by this document is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. Consistent with the Act, this paragraph shall be applied in accordance with the provisions and assurances of the Implementing Agreement. If the Service reinitiates formal consultation pursuant to this notice then, consistent with applicable law, the extent of any additional requirements of the permit applicants shall be governed by the Implementing Agreement.

If you have any questions concerning this Biological and Conference Opinion, please contact the Assistant Field Supervisor of the Service's Carlsbad Field Office at (760) 431-9440.

Sincerely,

Sheryl L. Barrett
Assistant Field Supervisor

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